US 20020032658A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2002/0032658 A1**

OKI et al. (43) **Pub. Date: Mar. 14, 2002**

(54) **SYSTEM AND METHOD OF ONLINE DECIPHERING DATA ON STORAGE MEDIUM**

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(*) Notice: This is a publication of a continued prosecution application (CPA) filed under 37 CFR 1.53(d).

(21) Appl. No.: **08/675,837**

(22) Filed: **Jul. 5, 1996**

(30) **Foreign Application Priority Data**

Jul. 21, 1995 (JP) 07-186038

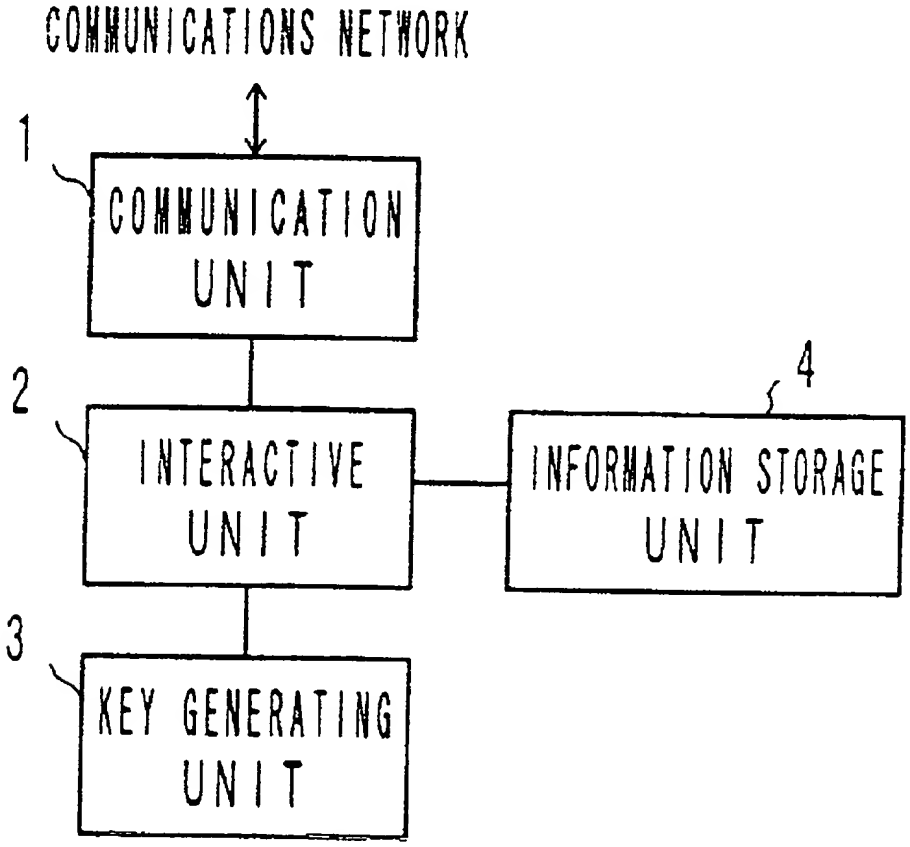
Publication Classification

(51) **Int. Cl.**[7] **H04L 9/00**; G06F 17/60

(52) **U.S. Cl.** **705/51**; 713/193; 380/279; 713/200

(57) **ABSTRACT**

The user mounts a distributed storage medium in his or her terminal unit, selects desired information from stored information, and notifies the host central computer through a network. The host computer generates key information for use in deciphering the selected information by combining the identifier of the selected information, user identification, etc. and sends the key information to a user terminal unit. The user deciphers the selected information according to the transmitted key information, and then accesses the information.



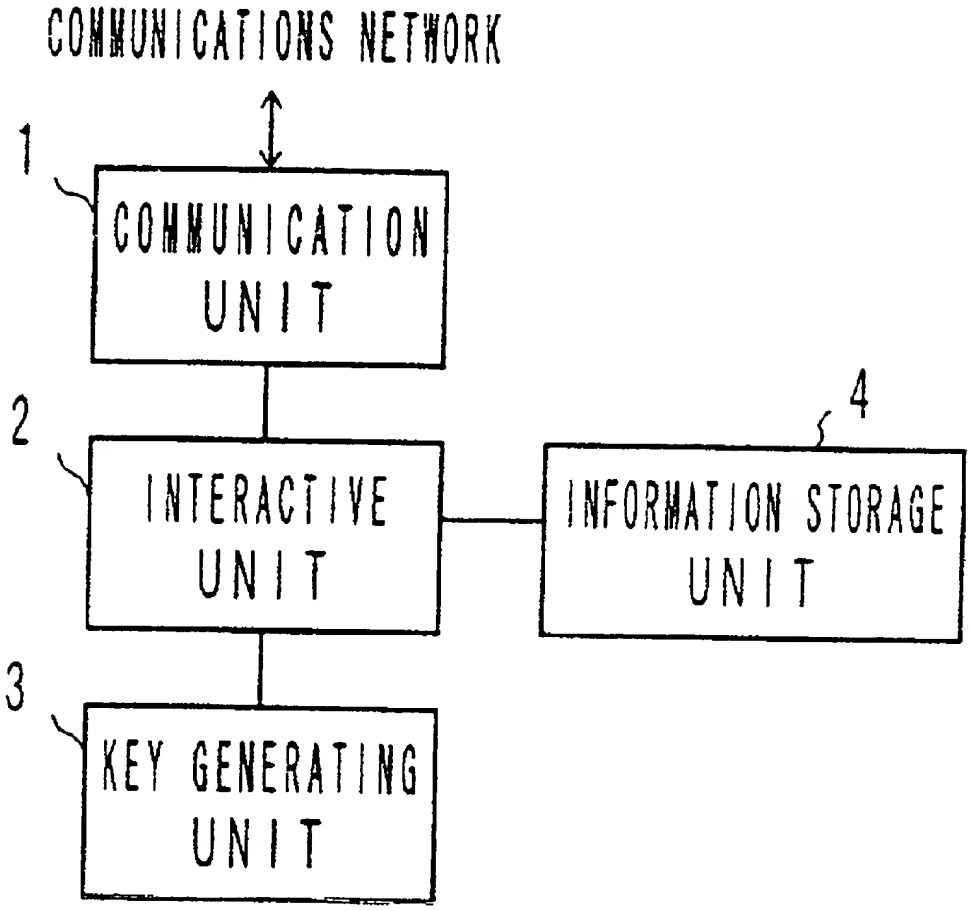

COMMUNICATIONS NETWORK
1
COMMUNICATION UNIT
2
INTERACTIVE UNIT
4
INFORMATION STORAGE UNIT
3
KEY GENERATING UNIT

FIG. 1

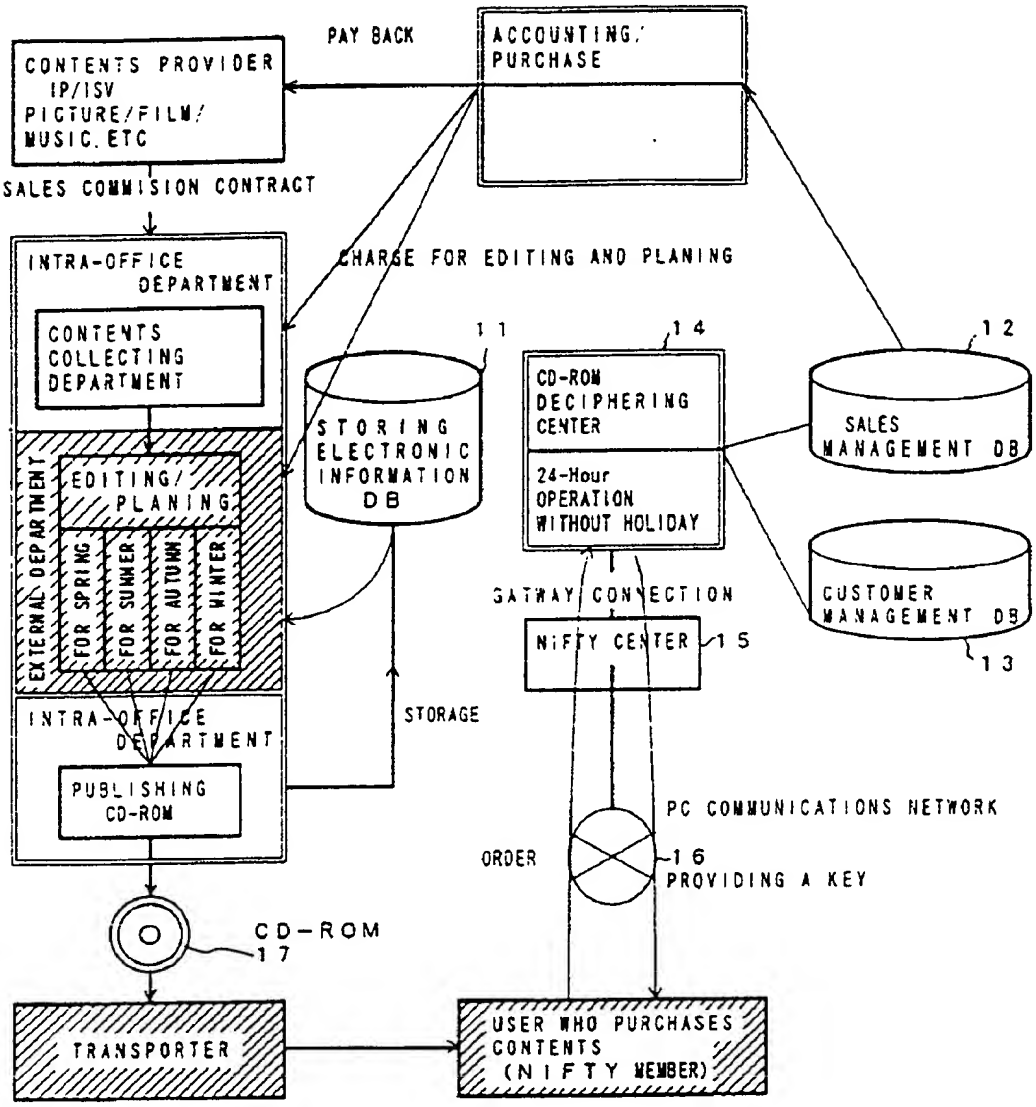

CONTENTS PROVIDER
IP/ISV
PICTURE/FILM/
MUSIC. ETC
PAY BACK
ACCOUNTING/
PURCHASE
SALES COMMISION CONTRACT
INTRA-OFFICE
DEPARTMENT
CONTENTS
COLLECTING
DEPARTMENT
CHARGE FOR EDITING AND PLANING
11
14
12
STORING
ELECTRONIC
INFORMATION
DB
CD-ROM
DECIPHERING
CENTER
24-Hour
OPERATION
WITHOUT HOLIDAY
SALES
MANAGEMENT DB
CUSTOMER
MANAGEMENT DB
13
EXTERNAL DEPARTMENT
EDITING/
PLANING
FOR SPRING
FOR SUMMER
FOR AUTUMN
FOR WINTER
GATWAY CONNECTION
NIFTY CENTER
15
STORAGE
INTRA-OFFICE
DEPARTMENT
PUBLISHING
CD-ROM
PC COMMUNICATIONS NETWORK
ORDER
16
PROVIDING A KEY
CD-ROM
17
TRANSPORTER
USER WHO PURCHASES
CONTENTS
(NIFTY MEMBER)

FIG. 2.

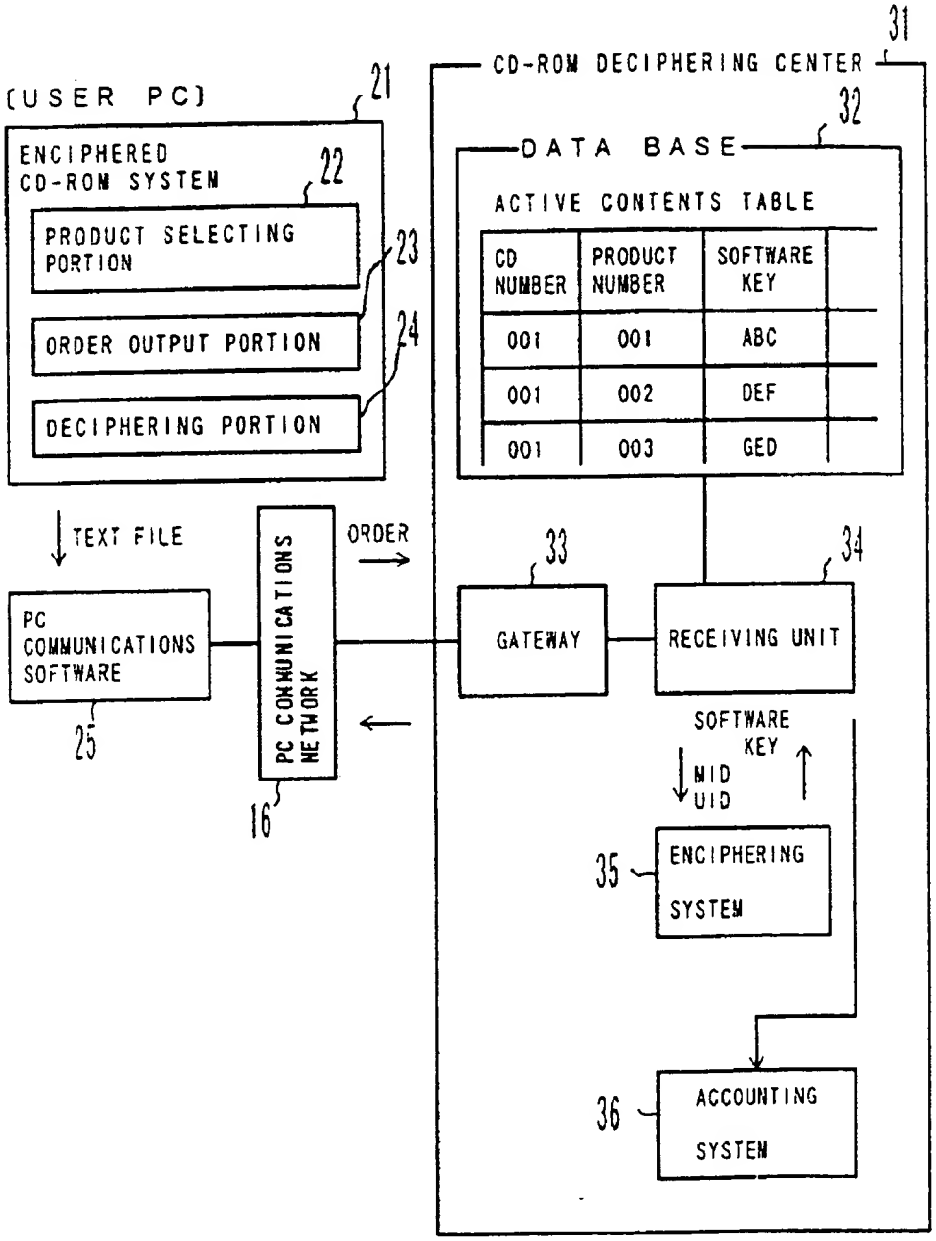

31
CD-ROM DECIPHERING CENTER
(USER PC)
21
ENCIPHERED CD-ROM SYSTEM
22
PRODUCT SELECTING PORTION
23
ORDER OUTPUT PORTION
24
DECIPHERING PORTION
32
DATA BASE
ACTIVE CONTENTS TABLE
CD NUMBER
PRODUCT NUMBER
SOFTWARE KEY
001 001 ABC
001 002 DEF
001 003 GED
TEXT FILE
ORDER
PC COMMUNICATIONS SOFTWARE
25
PC COMMUNICATIONS NETWORK
16
33
GATEWAY
34
RECEIVING UNIT
SOFTWARE KEY
MID UID
35
ENCIPHERING SYSTEM
36
ACCOUNTING SYSTEM

FIG. 3A

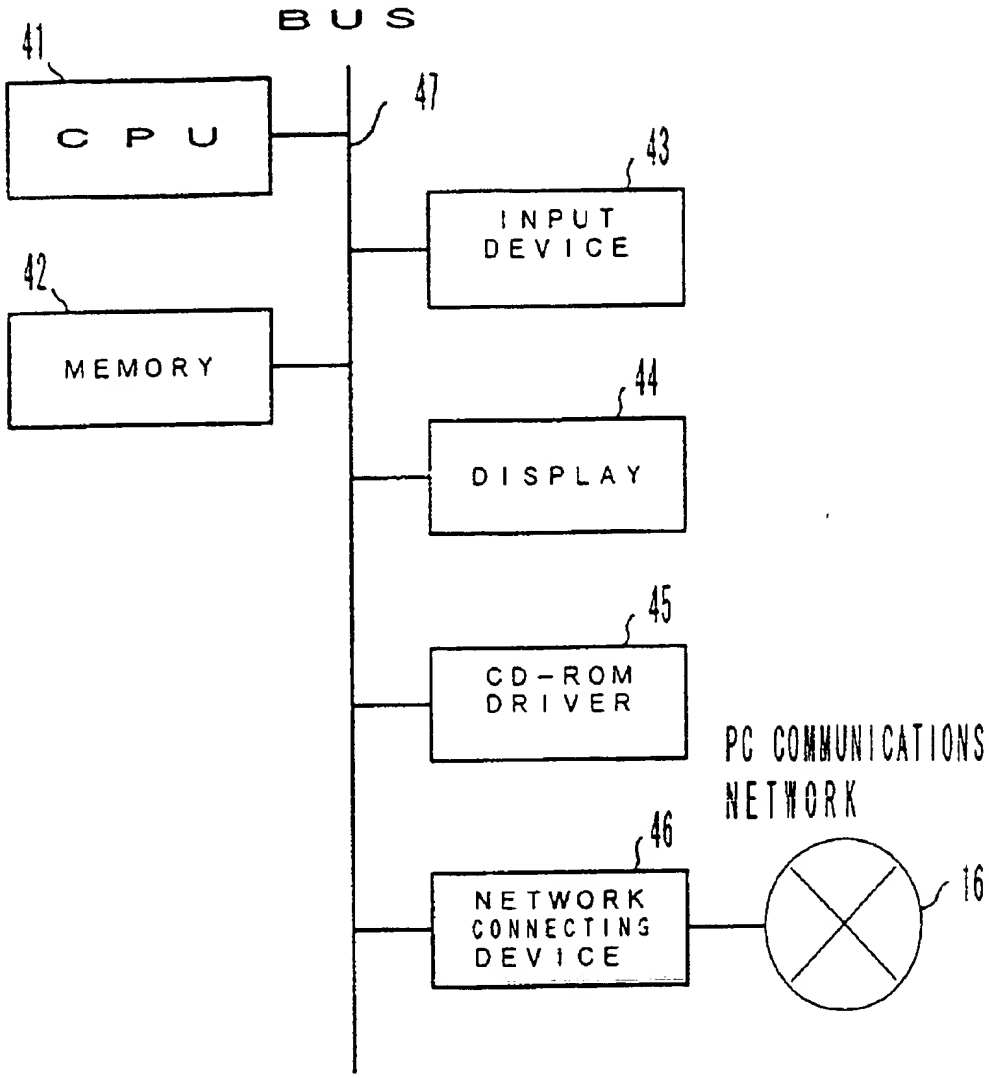

BUS
41
CPU
47
43
INPUT DEVICE
42
MEMORY
44
DISPLAY
45
CD-ROM DRIVER
PC COMMUNICATIONS NETWORK
46
NETWORK CONNECTING DEVICE
16

FIG. 3B

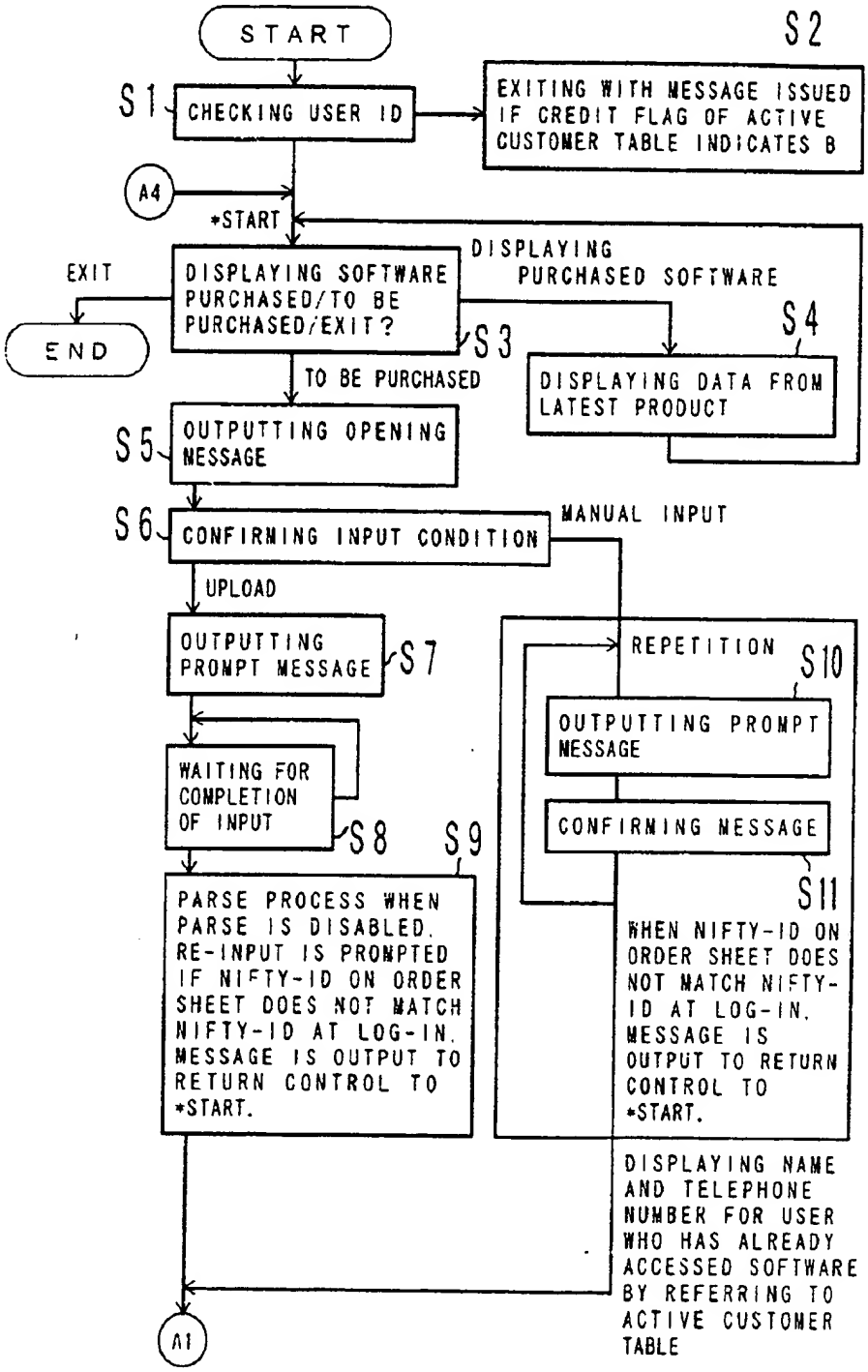

START
S1
CHECKING USER ID
S2
EXITING WITH MESSAGE ISSUED IF CREDIT FLAG OF ACTIVE CUSTOMER TABLE INDICATES B
A4
*START
DISPLAYING SOFTWARE PURCHASED/TO BE PURCHASED/EXIT?
EXIT
END
S3
DISPLAYING PURCHASED SOFTWARE
S4
DISPLAYING DATA FROM LATEST PRODUCT
TO BE PURCHASED
S5
OUTPUTTING OPENING MESSAGE
S6
CONFIRMING INPUT CONDITION
MANUAL INPUT
UPLOAD
OUTPUTTING PROMPT MESSAGE
S7
WAITING FOR COMPLETION OF INPUT
S8
S9
PARSE PROCESS WHEN PARSE IS DISABLED, RE-INPUT IS PROMPTED IF NIFTY-ID ON ORDER SHEET DOES NOT MATCH NIFTY-ID AT LOG-IN, MESSAGE IS OUTPUT TO RETURN CONTROL TO *START.
REPETITION
S10
OUTPUTTING PROMPT MESSAGE
CONFIRMING MESSAGE
S11
WHEN NIFTY-ID ON ORDER SHEET DOES NOT MATCH NIFTY-ID AT LOG-IN, MESSAGE IS OUTPUT TO RETURN CONTROL TO *START.
DISPLAYING NAME AND TELEPHONE NUMBER FOR USER WHO HAS ALREADY ACCESSED SOFTWARE BY REFERRING TO ACTIVE CUSTOMER TABLE
A1

FIG. 4

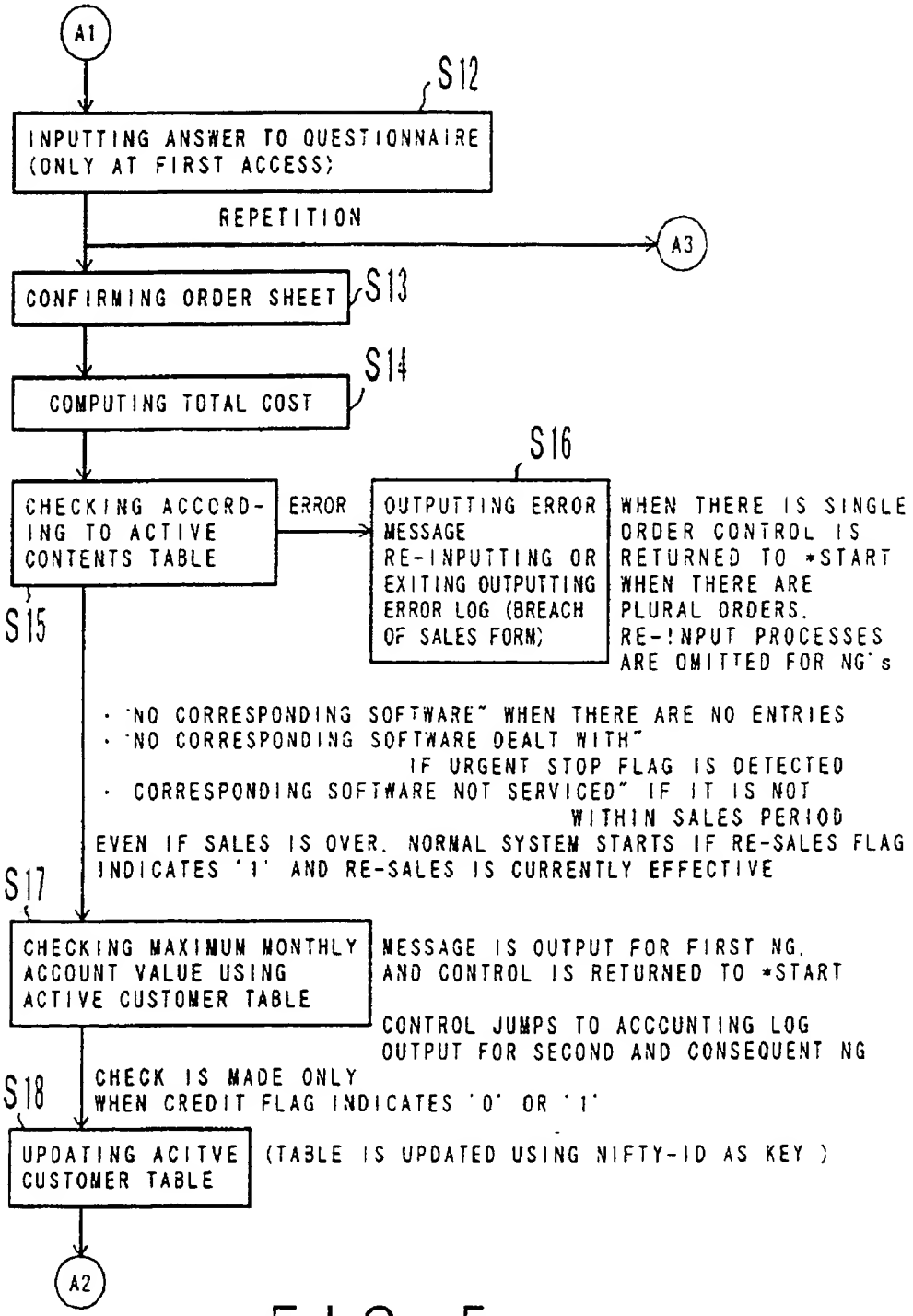

A1
S12
INPUTTING ANSWER TO QUESTIONNAIRE (ONLY AT FIRST ACCESS)
REPETITION
A3
CONFIRMING ORDER SHEET
S13
S14
COMPUTING TOTAL COST
S16
CHECKING ACCORDING TO ACTIVE CONTENTS TABLE
ERROR
OUTPUTTING ERROR MESSAGE RE-INPUTTING OR EXITING OUTPUTTING ERROR LOG (BREACH OF SALES FORM)
WHEN THERE IS SINGLE ORDER CONTROL IS RETURNED TO *START WHEN THERE ARE PLURAL ORDERS. RE-INPUT PROCESSES ARE OMITTED FOR NG's
S15
· "NO CORRESPONDING SOFTWARE" WHEN THERE ARE NO ENTRIES
· "NO CORRESPONDING SOFTWARE DEALT WITH" IF URGENT STOP FLAG IS DETECTED
· CORRESPONDING SOFTWARE NOT SERVICED" IF IT IS NOT WITHIN SALES PERIOD
EVEN IF SALES IS OVER. NORMAL SYSTEM STARTS IF RE-SALES FLAG INDICATES '1' AND RE-SALES IS CURRENTLY EFFECTIVE
S17
CHECKING MAXIMUM MONTHLY ACCOUNT VALUE USING ACTIVE CUSTOMER TABLE
MESSAGE IS OUTPUT FOR FIRST NG. AND CONTROL IS RETURNED TO *START
CONTROL JUMPS TO ACCOUNTING LOG OUTPUT FOR SECOND AND CONSEQUENT NG
S18
CHECK IS MADE ONLY WHEN CREDIT FLAG INDICATES '0' OR '1'
UPDATING ACITVE CUSTOMER TABLE
(TABLE IS UPDATED USING NIFTY-ID AS KEY)
A2

FIG. 5

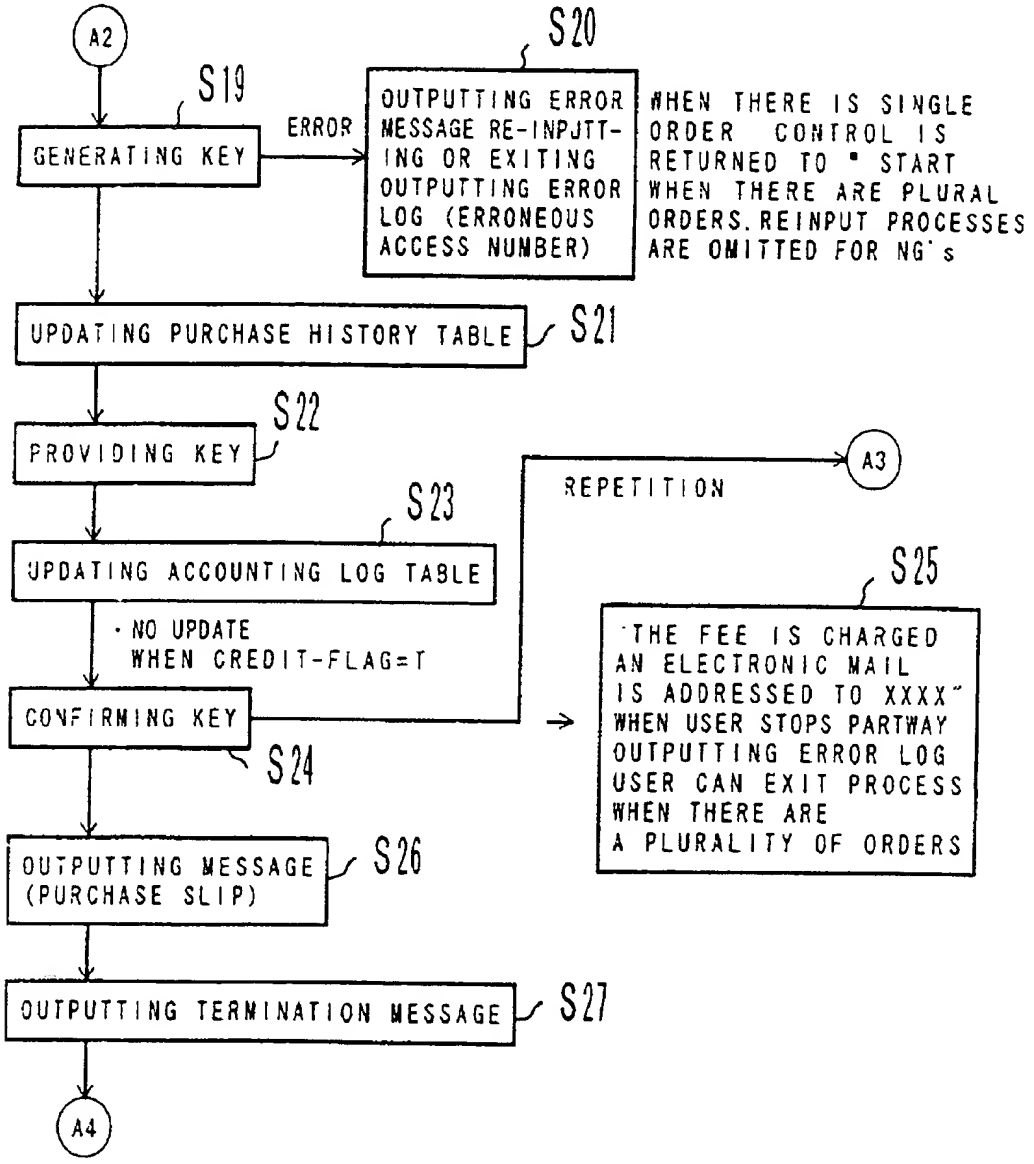

A2
S19
GENERATING KEY
ERROR
S20
OUTPUTTING ERROR MESSAGE RE-INPUTTING OR EXITING OUTPUTTING ERROR LOG (ERRONEOUS ACCESS NUMBER)
WHEN THERE IS SINGLE ORDER CONTROL IS RETURNED TO " START WHEN THERE ARE PLURAL ORDERS. REINPUT PROCESSES ARE OMITTED FOR NG's
UPDATING PURCHASE HISTORY TABLE
S21
S22
PROVIDING KEY
S23
UPDATING ACCOUNTING LOG TABLE
· NO UPDATE WHEN CREDIT-FLAG=T
CONFIRMING KEY
S24
REPETITION
A3
S25
"THE FEE IS CHARGED AN ELECTRONIC MAIL IS ADDRESSED TO XXXX" WHEN USER STOPS PARTWAY OUTPUTTING ERROR LOG USER CAN EXIT PROCESS WHEN THERE ARE A PLURALITY OF ORDERS
OUTPUTTING MESSAGE (PURCHASE SLIP)
S26
OUTPUTTING TERMINATION MESSAGE
S27
A4

FIG. 6

```
COMPUTER HARDWARE
1.. PC-TECH                              2. SOFTLAND
3. PC WORKSHOP                           4. SOFTWARE GARDEN
5. FUJITSU SPECIALTY SHOP "ACCESS"       6. MICROHOUSE
7. GENERAL GOODS OF ELECTRICS            8. PERSONAL COMPUTER SHOP
   "ELECTRIC CLUB"                          "MANKAI"
9. COMPUTER STATION "JCS"                10. VAC FRONTIER ZINDAI SHOP
11. SOFT-CREATE                          12. DOS/V SPECIALITY SHOP
13. LAOX/COMPUTER HOUSE DIRECT               "BLUE STAR"
15. SONY SHOP ELCOM                      14. PINOCCHIO
17. "MEDIA SHUTTLE"                      16. JC-WORLD ONLINE SHOP
>17
WELCOME TO MEDIA SHUTTLE SERVICE                    MSHUTTLE(MSH)

1. INFORMATION
2. HOW TO USE SERVICES
3. RECEIVING SERVICE

>3
CONNECTION IS BEING SET  WAIT A MOMENT

THANK YOU FOR TAKING THE MEDIA SHUTTLE
PLEASE ENJOY THE WIDE SELECTION AND LARGE VOLUME OF VARIOUS
EXCELLENT CONTENTS AND PRODUCTS SPECIFIC TO MEDIA SHUTTLE
FIRST, INSTALL THE PRODUCTS OF MEDIA SHUTTLE TO YOUR
PERSONAL COMPUTER AS FOLLOWS

          >>>>>   HAVE A NICE TRIP !!!   <<<<<
ENTER 1 TO OBTAIN IMPLEMENTATION KEY NUMBER REQUIRED TO INSTALL PRODUCTS
ENTER 2 TO DISPLAY LIST OF PRODUCTS  WHOSE IMPLEMENTATION KEY NUMBERS
HAVE ALREADY BEEN ACQUIRED.  ENTER E TO TERMINATE PROCESS

ENTRY (1 TO ACQUIRE IMPLEMENTATION KEY, 2 TO LIST PRODUCTS,
AND E TO TERMINATE PROCESS)
>1
THERE ARE TWO METHODS TO ACQUIRE IMPLEMENTATION KEY
/*CAN BE FIXED */
(FOR DETAILS, REFER TO INTRODUCTION DESCRIBED
IN ISSUED OLTJ IN AUGUST, '95)
ENTER 1 TO INPUT DATA ON SCREEN THROUGH KEYBOARD WHILE CHECKING
ALREADY IMPLEMENTED FILES   ENTER 2 TO FOLLOW TEXT UPLOAD METHOD
ON ALREADY IMPLEMENTED FILES   ENTER E TO STOP PROCEDURE
ENTRY (1 TO ENTER THROUGH KEYBOARD, 2 TO UPLOAD TEXT, AND E TO STOP)
```

FIG. 7

```
UPLOAD IMPLEMENTATION FILE IN TEXT MODE

 〈NIFTY-ID〉 AAAAAAAA 〈/NIFTY-ID 〉      /* REQUIRED */
 〈NAME〉 MENORU KATO 〈/NAME 〉
 〈ZIP 〉 213 〈/ZIP〉
 〈ADDR〉 A-A-A SHINSAKU, TAKATSU-KU, KAWASAKI CITY 〈/ADDR 〉
 〈TEL 〉 044-777-1111 〈/TEL〉
 〈CDNO〉 1234 〈/CDNO 〉                  /* REQUIRED */
 〈ACCNO 〉 0946-061-921 〈/ACCNO〉        /* REQUIRED */
 〈PNO 〉 101 〈/PNO〉                     /* REQUIRED */
 〈PNO 〉 205 〈/PNO〉
  /E

/* IF INFORMATION WITH RESPECT TO A NON-REQUIRED ITEM
DOES NOT EXIST, THE ITEM IS DISPLAYED SUCH AS 〈NAME〉 〈/NAME 〉 */

CONFIRM FOLLOWINGS
  (1) NIFTY-ID AAAAAAAA
  (2) NAME  MENORU KATO
  (3) POST CODE  213
  (4) ADDRESS  A-A-A, SHINSAKU, TAKATSU-KU, KAWASAKI CITY
  (5) TELEPHONE NUMBER  044-777-1111
  (6) CD NUMBER  1234
  (7) ACCESS NUMBER  0946-061-921
  (8) PRODUCT NUMBER 1  101      /* DISPLAYED IN 10 LINES */
  (9) PRODUCT NUMBER 2  201      /* WORK NUMBER IS MAX 899 */

CONFORMATION (1 OK  2 AMEND  E STOP)
: 2
ENTER NUMBER TO BE AMENDED

> 2
  (2) NAME  MENORU KATO
  PLEASE ENTER

>MINORU KATO
  (2) NAME MINORU KATO

CONFIRMATION (1.OK  2 AMEND  E STOP)
: 1
FURTHER AMENDMENT ?
AMENDMENT (1 NO  2 YES)
```

FIG. 8

```
ENTER YOUR BIRTHDAY (CAN BE SKIPPED BY LINE FEED)
     ENTRY EXAMPLE  1970/01/01
>1996/08/01
BIRTHDAY  1966/08/01

CONFIRMATION (1 OK  2 AMEND  E STOP)
: 1
ENTER YOUR GENDER ( CAN BE SKIPPED BY LINE FEED)
     SELECTION   1. MALE   2 FEMALE
> 1
GENDER  1
CONFIRMATION (1 OK  2 AMEND  E STOP)
: 1
ENTER MODEL NUMBER OF YOUR PERSONAL COMPUTER
(WITHIN 8 CHINESE CHARACTERS) (CAN BE SKIPPED BY LINE FEED)
>FM-TOWNS-MX

MODEL  FM-TOWNS-MX
CONFIRMATION (1 OK  2 AMEND  E STOP)
: 1

ENTER TYPE OF YOUR CREDIT CARD (CAN BE SKIPPED BY LINE FEED)
  TYPE OF CREDIT CARD (1 JCB   2 DC   3 VISA   4 MILLION
                       5 UC    6 CF   7 AMERICAN EXPRESS
                       8 DINERS       9 NIHON SHINPAN   10 JACCS
                      11 ORIENT      12 SEASON      13 NIFTY-ORICO CARD
                      14 NIFTY-JCB CARD)
> 1
CREDIT CARD 1
CONFIRMATION (1 OK  2 AMEND  E STOP)
: 1

PRODUCT NUMBER IS CONFIRMED AS FOLLOWS
PRODUCT NUMBER              NAME OF PRODUCT
-------------------------------------------
101                         CALC/Win Lite V2 0

CONFIRMATION (1 OK  2 AMEND  E STOP)
: 1
```

FIG. 9

```
REQUESTED IMPLEMENTATION KEY No  IS AS FOLLOWS
NOTE IMPLEMENTATION KEY No  BECAUSE IT IS REQUIRED TO INSTALL PRODUCT

IMPLEMENTATION KEY No.      NAME OF PRODUCT
-------------------------------------
1234-567-890                CALC/Win Lite V2.0

ENTER IMPLEMENTATION KEY No  FOR CONFIRMATION
: 1234-567-890

CONFIRMED

PRODUCT NUMBER IS TO BE CONFIRMED

PRODUCT NUMBER              NAME OF PRODUCT
-----------------------------------------
205                         MRDB for Windows V1 1

CONFIRMATION (1 OK  2 AMEND  E STOP)
: 1

REQUESTED IMPLEMENTATION KEY No  IS AS FOLLOWS
NOTE IMPLEMENTATION KEY No  BECAUSE IT IS REQUIRED TO INSTALL PRODUCT

IMPLEMENTATION KEY No       NAME OF PRODUCT
-----------------------------------------
1234-567-891                MRDB for Windows V1.1

ENTER IMPLEMENTATION KEY No  FOR CONFIRMATION
: 1234-567-891

CONFIRMED
```

FIG. 10

07/14/2004, EAST Version: 1.4.1

```
REQUESTED PRODUCT IMPLEMENTATION LIST IS AS FOLLOWS

1. NIFTY-ID:AAAAAAA
2. NAME: MINORU KATO
3. POST CODE. 213
4. ADDRESS. A-A-A. SHINSAKU. TAKATSU-KU. KAWASAKI CITY
5. TELEPHONE NUMBER  044-777-1111
6. CD NUMBER: 1234
7. ACCESS NUMBER· 0946-061-921

PRODUCT NUMBER    IMPLEMENTATION KEY No   NAME OF PRODUCT
-------------------------------------------------------------
 101                  1234-567-890         CALC/Win Lite V2.0
 205                  1234-567-891         MRDB for Windows V1.1

IMPLEMENTATION FEE (XXXX YEN) IS ADDED TO NIFTY-SERVE USE FEE
AND TRANSFERRED FROM YOUR ACCOUNT

THANK YOU FOR YOUR REQUEST


*1 ENTRY (1 ACQUIRE IMPLEMENTATION KEY No   2 LIST PRODUCTS  E TERMINATE PROCESS)
> 1
```

FIG. 11

```
ENTRY (1 ENTER THROUGH KEYBOARD   2 UPLOAD TEXT   E STOP)
>1

INTER NIFTY-ID
>AAAAAAAA
NIFTY-ID:AAAAAAA
CONFIRMATION (1 OK  2 AMEND  E STOP)
: 1

ENTER YOUR NAME
>MINORU KATO
NAME  MINORU KATO
CONFIRMATION (1.OK  2.AMEND  E STOP)
: 1
~
  ENTER CD NUMBER
>1234
CD NUMBER 1234
CONFIRMATION (1 OK  2 AMEND  E STOP)
: 1

ENTER ACCESS NUMBER
>0946-061-921
ACCESS NUMBER 0946-061-921
CONFIRMATION (1 OK  2 AMEND  E STOP)
: 1

ENTER YOUR BIRTHDAY (CAN BE SKIPPED BY LINE FEED)
     ENTRY EXAMPLE 1970/01/01
>1966/08/01

BIRTHDAY 1966/08/01

CONFIRMATION (1 OK  2 AMEND  E STOP)
: 1

ENTER YOUR GENDER (CAN BE SKIPPED BY LINE FEED)
        SELECTION  1.MALE  2.FEMALE
>1

GENDER 1

CONFIRMATION (1 OK  2 AMEND  E STOP)
: 1
```

FIG. 12

```
ENTER MODEL NUMBER OF YOUR PERSONAL COMPUTER
(WITHIN 8 CHARACTERS) (CAN BE SKIPPED BY LINE FEED)
>FM-TOWNS-MX

MODEL  FM-TOWNS-MX

CONFIRMATION (1 OK  2 AMEND  E STOP)
: 1

ENTER TYPE OF YOUR CREDIT CARD (CAN BE SKIPPED BY LINE FEED)
  TYPE OF CREDIT CARD (1:JCB   2:DC   3:VISA   4 MILLION
                       5:UC    6:CF   7:AMERICAN EXPRESS
                       8:DINERS       9 NIHON SHINPAN   10 JACCS
                      11:ORIENT      12 SEASON      13 NIFTY-ORICO CARD
                      14 NIFTY-JCB CARD)
> 1

CREDIT CARD 1

CONFIRMATION (1 OK  2 AMEND  E STOP)
: 1

ENTER YOUR PRODUCT NUMBER

>101

PRODUCT NUMBER IS CONFIRMED AS FOLLOWS

PRODUCT NUMBER            NAME OF PRODUCT
--------------------------------------------
101                       CALC/Win Lite V2 0

CONFIRMATION (1 OK  2 AMEND  E STOP)
: 1
```

FIG. 13

```
REQUESTED IMPLEMENTATION KEY No  IS AS FOLLOWS
NOTE IMPLEMENTATION KEY No. BECAUSE IT IS REQUIRED TO INSTALL PRODUCT

IMPLEMENTATION KEY No.      NAME OF PRODUCT
-------------------------------------------
1234-567-890                CALC/Win Lite V2.0

ENTER IMPLEMENTATION KEY No  FOR CONFIRMATION
: 1234-567-890

CONFIRMED

FURTHER IMPLEMENTATION?
ENTRY (1 FURTHER IMPLEMENT  2 COMPLETE IMPLEMENTATION)

: 1

ENTER PRODUCT NUMBER

SAME AS DESCRIPTIONS ABOVE
```

FIG. 14

```
ENTRY (1 ENTER THROUGH KEYBOARD   2 UPLOAD TEXT   E·STOP)
>1

ENTER NIFTY-ID
>AAAAAAAA
NIFTY-ID·AAAAAAA
CONFIRMATION (1·OK  2.AMEND  E·STOP)
: 1

PLEASE CONFIRM FOLLOWINGS
  (1) NIFTY-ID:AAAAAAA
  (2) NAME  MINORU KATO
  (3) POST CODE: 213
  (4) ADDRESS: A-A-A, SHINSAKU, TAKATSU-KU, KAWASAKI CITY
  (5) TELEPHONE NUMBER: 044-777-1111
  (6) CD NUMBER: 1234
  (7) ACCESS NUMBER· 0946-061-921

CONFORMATION (1 OK  2 AMEND  E STOP)
: 1

ENTER PRODUCT NUMBER

>101

PRODUCT NUMBER IS CONFIRMED AS FOLLOWS

PRODUCT NUMBER          NAME OF PRODUCT
-------------------------------------------
101                     CALC/Win Lite V2 0

CONFIRMATION (1 OK  2 AMEND  E.STOP)

: 1
```

FIG. 15

```
SUB  ORDER OF ENCIPHERING CD-ROM
TO  CDROMHOST

TRANSMITTED MAIL
 (NIFTY-ID) AAAAAAAA (/NIFTY-ID )          /* REQUIRED */
 (NAME) MINORU KATO  (/NAME )
 (ZIP ) 213  (/ZIP)
 (ADDR) A-A-A, SHINSAKU, TAKATSU-KU, KAWASAKI CITY (/ADDR )
 (TEL ) 044-777-1111 (/TEL)
 (CDNO) 1234 (/CDNO )                      * REQUIRED */
 (ACCNO ) 0946-061-921 (/ACCNO)            * REQUIRED */
 (PNO ) 101  ( PNO)                        * REQUIRED */
 (PNO ) 205  ( PNO)
   E


RECEIVED MAIL

MR  MINORU KATO
YOUR IMPLEMENTATION KEY No  ARE LISTED BELOW

PRODUCT NUMBER    IMPLEMENTATION KEY No   NAME OF PRODUCT
-------------------------------------------------------------
 101                1234-567-890          CALC/Win Lite V2 0
 205                1234-567-891          MRDB for Windows V1.1
```

FIG. 16

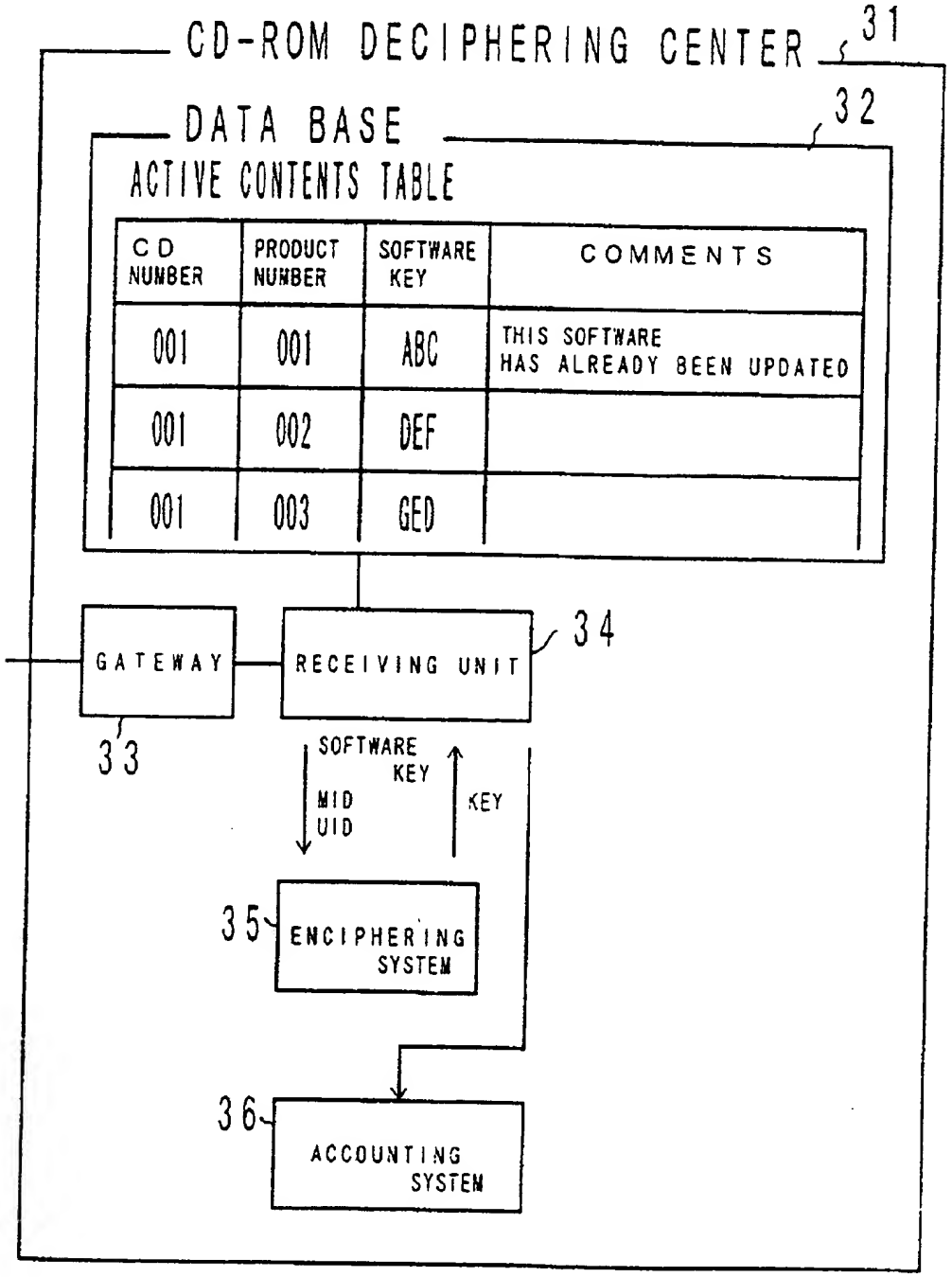

CD-ROM DECIPHERING CENTER
31
DATA BASE
32
ACTIVE CONTENTS TABLE
CD NUMBER
PRODUCT NUMBER
SOFTWARE KEY
COMMENTS
001
001
ABC
THIS SOFTWARE HAS ALREADY BEEN UPDATED
001
002
DEF
001
003
GED
GATEWAY
RECEIVING UNIT
34
33
SOFTWARE KEY
MID UID
KEY
35
ENCIPHERING SYSTEM
36
ACCOUNTING SYSTEM

FIG. 17

```
PRODUCT NUMBER IS CONFIRMED AS FOLLOWS

THIS SOFTWARE HAS ALREADY BEEN UPDATED
IF THIS IS ACCEPTED, PLEASE PURCHASE THIS SORTWARE

PRODUCT NUMBER              NAME OF PRODUCT
-------------------------------------------
 001                        CALC/Win Lite V2 0

CONFIRMATION (1 OK  2 AMEND  E STOP)
:E
```

FIG. 18

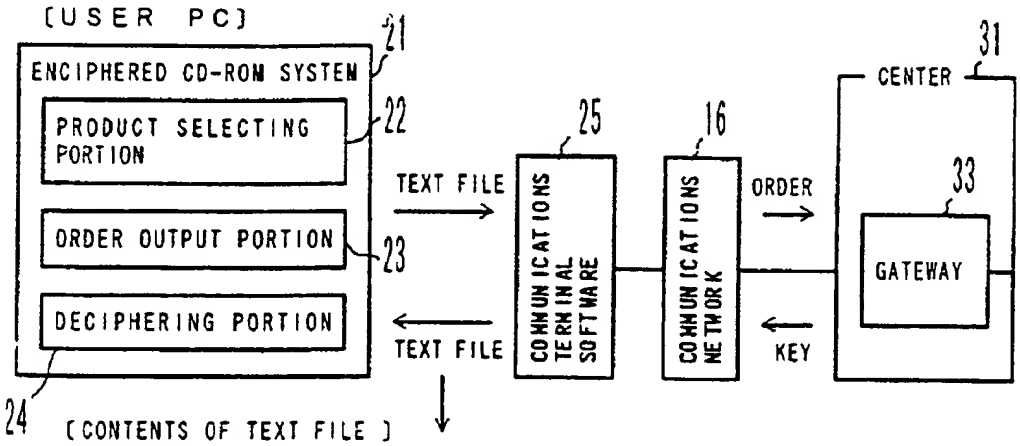
REQUESTED IMPLEMENTATION KEY No. IS AS FOLLOWS
NOTE IMPLEMENTATION KEY No. BECAUSE IT IS REQUIRED TO INSTALL PRODUCT

IMPLEMENTATION KEY No.	NAME OF PRODUCT
1234-567-890	CALC/Win Lite V2.0

ENTER IMPLEMENTATION KEY No FOR CONFIRMATION
: 1234-567-890

CONFIRMED

FIG. 19



[CONTENTS OF TEXT FILE]

REQUESTED PRODUCT IMPLEMENTATION LIST IS AS FOLLOWS

1. NIFTY-ID	AAAAAAAA
2. NAME	MINORO KATO
3. POST CODE	213
4. ADDRESS	A-A-A. SHINSAKU. TAKATSU-KU. KAWASAKI CITY
5. TELEPHONE NUMBER	044-777-1111
6. CD NUMBER	1234
7. ACCESS NUMBER	0946-061-921

PRODUCT NUMBER	IMPLEMENTATION KEY No	NAME OF PRODUCT
101	1234-567-890	CALC/Win Lite V2 0
205	1234-567-891	NRDB for Windows V1 1

IMPLEMENTATION FEE (XXXX YEN) IS ADDED TO NIFTY-SERVE USE FEE AND TRANSFERRED FROM YOUR ACCOUNT

FIG. 20

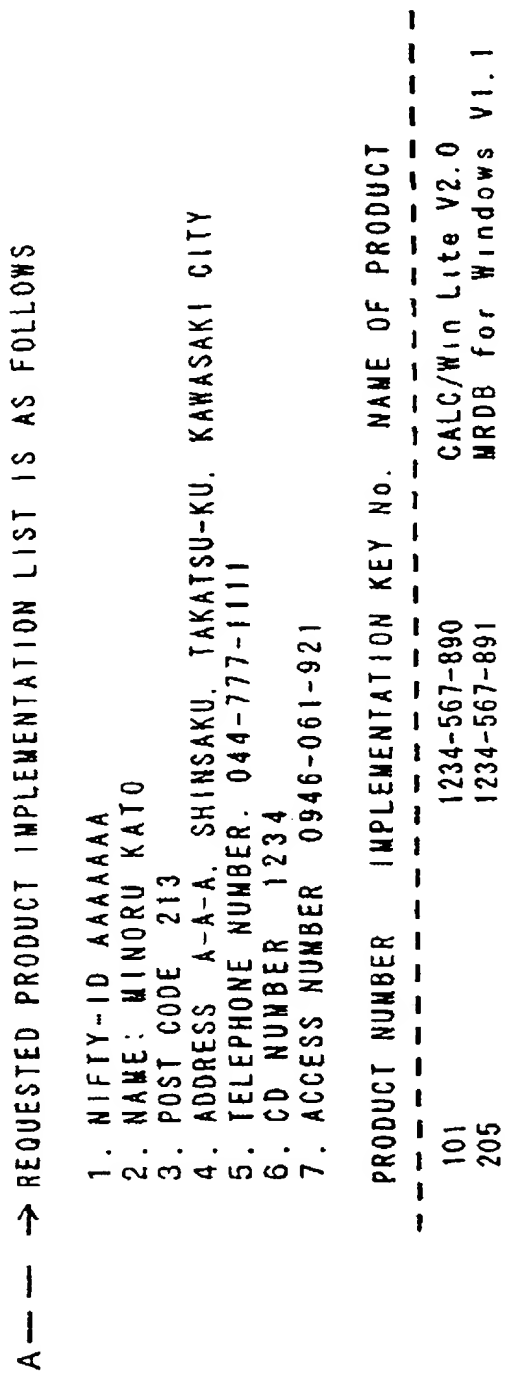

A → REQUESTED PRODUCT IMPLEMENTATION LIST IS AS FOLLOWS
1. NIFTY-ID AAAAAAA
2. NAME: MINORU KATO
3. POST CODE 213
4. ADDRESS A-A-A, SHINSAKU, TAKATSU-KU, KAWASAKI CITY
5. TELEPHONE NUMBER. 044-777-1111
6. CD NUMBER 1234
7. ACCESS NUMBER 0946-061-921
PRODUCT NUMBER IMPLEMENTATION KEY No. NAME OF PRODUCT
101 1234-567-890 CALC/Win Lite V2.0
205 1234-567-891 MRDB for Windows V1.1
B → IMPLEMENTATION FEE (XXXX YEN) IS ADDED TO NIFTY-SERVE USE FEE
AND TRANSFERRED FROM YOUR ACCOUNT

FIG. 21

RECORD NAME TYPE

1	CD NUMBER	CD_NO CHAR(4).	
2	PRODUCT NUMBER	WORK_NO CHAR(3).	
3	ABBREVIATION OF PRODUCT	WORK_ADDREV CHAR(60).	/* "NAME OF PRODUCT" WHEN DISPLAYED */
4	DESCRIPTION OF PRODUCT FOR INQUIRY	GOODS_EXPLAN CHAR(80).	/* MESSAGE */
5	PLANNING SEQUENCE No	PLAN_NO NUMBER(3).	/* NO OPERATION REQUIRED */
6	SALES PRICE NEW	NEW_PRICE NUMBER(6).	
7	SALES PRICE OLD.	OLD_PRICE NUMBER(6).	
8	PRICE SWITCH DATE	PRICE_CHG YYYYMMDD NUMBER(8).	
9	ABBREVIATION OF PROVIDER	PROVIDER CHAR(50).	/* NO OPERATION REQUIRED */
10	URGENT SALES STOP TYPE	URGENCY_STOP CHAR(1).	
11	SALES START DATE.	START_YYYYMMDD NUMBER(8).	
12	SALES START TIME.	START_HHMMSS NUMBER(6).	
13	SALES END DATE	STOP_YYYYMMDD NUMBER(8).	
14	SALES END TIME	STOP_HHMMSS NUMBER(6).	
15	RE-SALES TYPE	AGAIN_START CHAR(1).	
16	RE-SALES START DATE	AGAIN_START_YYYYMMDD NUMBER(8).	
17	RE-SALES START TIME	AGAIN_START_HHMMSS NUMBER(6).	
18	RE-SALES END DATE	AGAIN_STOP_YYYYMMDD NUMBER(8).	
19	RE-SALES END TIME	AGAIN_STOP_HHMMSS NUMBER(6).	
20	SOFTWARE KEY	SOFT_KEY CHAR(8).	
21	REGISTRATION DATE	REGIST_YYYYMMDD NUMBER(8).	
22	UPDATE DATE.	UPDATE_YYYYMMDD NUMBER(8).	
23	UPDATE TIME	UPDATE_HHMMSS NUMBER(6).	
24	CODE OF UPDATING PERSON	UPDATE_PCODE CHAR(8).	/* NO OPERATION REQUIRED */
25	SALES TYPE.	SALE_CLASS CHAR(1).	/* NO OPERATION REQUIRED */
26	SALES FORM TYPE	SALE_FORM CHAR(2).	
27	SALES STRATEGY TYPE	SALE_STRTGY CHAR(1).	/* NO OPERATION REQUIRED */
28	SALES STRATEGY DETAIL TYPE	SALE_STRTGY_DTL CHAR(1)	/* NO OPERATION REQUIRED */

FIG. 22

	RECORD NAME	TYPE
1	NIFTY-ID	NIFTY_ID CHAR(8).
2	MACHINE ID	MACHINE_ID NUMBER(10).
3	CD NUMBER.	CD_NO CHAR(4).
4	PRODUCT NUMBER	WORK_NO CHAR(3).
5	BRANCH NUMBER	BRANCH_NO NUMBER(3). /* SPACE FOR DEFAULT NO OPERATION IS REQUIRED. */
6	DATA:	DATA_YYYYMMDD NUMBER(8).
7	ABBREVIATION OF PRODUCT	WORK_ABBREV CHAR(60).
8	PURCHASE AMOUNT	BUY_MONEY NUMBER(6).
9	NUMBER OF ACCEPTED PURCHASE	BUY_RECEPT_TIMES NUMBER(3). /* INCLUDING PURCHASE OF NO CHARGE */
10	NUMBER OF PURCHASE	BUY_TIMES NUMBER(3) /* PURCHASE RECORDED FOR ACCOUNTING */

FIG. 23

07/14/2004, EAST Version: 1.4.1

```
1  NIFTY-ID                          RECORD NAME  TYPE
2  CREDIT TYPE                       NIFTY_ID CHAR(8)   UNIQUE.
3  CREDIT NUMBER                     CR_CARD CHAR(2).
4  NAME :                            CR_NO CHAR(19)
5  POST CODE                         USR_RAME CHAR(20).  10 DIGITS
6  ADDRESS                           ZIP_CODE CHAR(6).    6 DIGITS
7  TELEPHONE NUMBER                  USR_ADDRESS CHAR(160)
8  MODEL NUMBER 1                    USR_TEL CHAR(14).   14 DIGITS
9  MODEL NUMBER 2                    MACHINE 1 CHAR(16).  8 DIGITS
10 MODEL NUMBER 3                    MACHINE 2 CHAR(16).  8 DIGITS
11 MODEL NUMBER 4                    MACHINE 3 CHAR(16).  8 DIGITS
12 MODEL NUMBER 5                    MACHINE 4 CHAR(16).  8 DIGITS
13 BIRTHDAY :                        MACHINE 5 CHAR(16).  8 DIGITS
14 AGE :                             BIRTH_DAY NUMBER(8).DIGIT
15 GENDER :                          AGE NUMBER(3).       3 DIGITS
16 CREDIT FLAG                       SEX NUMBER(1).       1 DIGITS
17 CREDIT LIMIT NEW                  YOSHIN_FLAG CHAR(1).DIGIT   /* 1 MALE  2:FEMALE  */
                                     NEW_YOSHIN NUMBER(7).       /* 0 FOR DEFALT */
                                                                 /* USE LIMIT AMOUNT FOR *(MONTH)
18 CREDIT-LIMIT OLD                                                 500 THOUSAND YEN FOR DEFAULT
                                     OLD_YOSHIN NUMBER(7).       /* USE LIMIT AMOUNT FOR *(MONTH)
19 CREDIT SWITCH DATE                                               500 THOUSAND YEN FOR DEFAULT
20 PURCHASE AMOUNT                   YOSHIN_CHG_YYYYMMDD NUMBER(8)./* ACCESS DATE FOR DEFAULT */
   OF PREVIOUS MONTH                 LAST_MONTH_MONEY NUMBER(8).
21 PURCHASE AMOUNT
   OF CURRENT MONTH                  MONTH_MONEY NUMBER(8).
22 PURCHASE AMOUNT SWITCH DATE
23 UPDATE DATE                       BUY_CHG_YYYYMMDD NUMBER(8).  /* NOT USED */
24 UPDATE TIME                       UPDATE_YYYYMMDD NUMBER(8)./* SPACE FOR DEFAULT NO OPERATION REQUIRED */
25 CODE OF UPDATING PERSON           UPDATE_HHMMSS NUMBER(6).   /* SPACE FOR DEFAULT NO OPERATION REQUIRED */
                                     UPDATE_PCODE CHAR(8)       /* SPACE FOR DEFAULT NO OPERATION REQUIRED */
```

FIG. 24

		RECORD NAME TYPE
1	NIFTY ID	NIFTY_ID CHAR(8).
2	MACHINE ID	MACHINE_ID NUMBER(10).
3	CD NUMBER	CD_NO CHAR(4).
4	PRODUCT NUMBER	WORK_NO CHAR(3).
5	BRANCH NUMBER	BRANCH_NO NUMBER(3).
6	DATE	DATE_YYYYMMDD NUMBER(8).
7	TIME	TIME_HHMMSS NUMBER(6).
8	PURCHASE AMOUNT	BUY_MONEY NUMBER(6).
9	TYPE OF CRED'T COMPANY	CR_COMPANY CHAR(2).
10	CREDIT NUMBER	C"_NO CHAR(19).
11	NAME	U>R_NAME CHAR(20).
12	GENDER	SEX CHAR(1). 1 DIGIT
13	BIRTHDAY	BIRTH_DAY NUMBER(8).
14	AGE	AGE NUMBER(3). DIGIT
15	MODEL NUMBER 1	MACHINE_NAME 1 CHAR(16).
16	MODEL NUMBER 2	MACHINE_NAME 2 CHAR(16).
17	MODEL NUMBER 3	MACHINE_NAME 3 CHAR(16).
18	MODEL NUMBER 4	MACHINE_NAME 4 CHAR(16).
19	MODEL NUMBER 5	MACHINE_NAME 5 CHAR(16).
20	POST CODE	ZIP_CODE CHAR(6).
21	ADDRESS	USR_ADDRESS CHAR(160).
22	TELEPHONE NUMBER	USR_TEL CHAR(14).
23	ACCESS NUMBER	ACCESS_NO NUMBER(10).
24	IMPLEMENTATION KEY No.	INTRO_KEY_NO NUMBER(10).

FIG. 25

		RECORD NAME TYPE
1	NIFTY ID	NIFTY_ID CHAR(8).
2	MACHINE ID	MACHINE_ID NUMBER(10).
3	CD NUMBER	CD_NO CHAR(4).
4	PRODUCT NUMBER	WORK_NO CHAR(3).
5	BRANCH NUMBER	BRANCH_NO NUMBER(3).
6	DATE	DATE_YYYYMMDD NUMBER(8).
7	TIME	TIME_HHMMSS NUMBER(6).
8	PURCHASE AMOUNT	BUY_MONEY NUMBER(6).
9	TYPE OF CREDIT COMPANY	CR_COMPANY CHAR(2).
10	CREDIT NUMBER	CR_NO CHAR(19).
11	NAME	USR_NAME CHAR(20).
12	GENDER	SEX CHAR(1). 1 DIGIT
13	BIRTHDAY	BIRTH_DAY NUMBER(8).
14	AGE	AGE NUMBER(3). DIGIT
15	MODEL NUMBER 1	MACHINE_NAME 1 CHAR(16).
16	MODEL NUMBER 2	MACHINE_NAME 2 CHAR(16).
17	MODEL NUMBER 3	MACHINE_NAME 3 CHAR(16).
18	MODEL NUMBER 4	MACHINE_NAME 4 CHAR(16).
19	MODEL NUMBER 5	MACHINE_NAME 5 CHAR(16)
20	POST CODE	ZIP_CODE CHAR(6).
21	ADDRESS	USR_ADDRESS CHAR(160).
22	TELEPHONE NUMBER	USR_TEL CHAR(14).
23	ACCESS NUMBER	ACCESS_NO NUMBER(10).
24	IMPLEMENTATION KEY No.	INTRO_KEY_NO NUMBER(10).
25	REASON FOR ERROR	ERROR_REASON_NUMBER(10).

FIG. 26

```
1 DATE
2 TIME
3 NIFTY-ID
4 LOG IN/LOG OUT
5 SERVICE ID
```

```
RECORD NAME TYPE

DATE_YYYYMMDD NUMBER(8).
TIME_HHMMSS NUMBER(6).
NIFTY_ID CHAR(8).
SESSION_CLASS CHAR(1).
SERVICE_ID NUMBER(3)./* NO OPERATION REQUIRED */
```

FIG. 27

SYSTEM AND METHOD OF ONLINE DECIPHERING DATA ON STORAGE MEDIUM

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates to a system and method of online releasing of software, which is encrypted and stored on a storage medium and distributed to the user, from a cryptogram.

[0003] 2. Description of the Related Art

[0004] Recently, it has become popular that CD-ROM disks (compact disk read only memory) as large capacity storage media are distributed with software, such as programs, image data, etc. stored on them. The users obtain the CD-ROM disks directly at stores or through mail order systems. However, the user has to either go all the way to the store or wait for a certain period to actually obtain the disks.

[0005] Under the above described situation, it has been suggested that the CD-ROMs should be first distributed to the users. The problem is how the distribution is established.

SUMMARY OF THE INVENTION

[0006] The present invention aims at providing a system and method of online releasing of software distributed to a user from a cryptogram, so that the information stored on a storage medium such as a CD-ROM, etc. distributed to the users, can be purchased and utilized by them.

[0007] The online deciphering system according to the present invention comprises a communication unit, an interactive unit, an information storage unit, and a key generating unit. The online deciphering system corresponds to, for example, a host computing system connected to a user terminal through a communications network to decipher data from an encrypted form on a storage medium mounted in the user terminal unit. The storage medium can be, for example, a CD-ROM, floppy disk, memory card, magnetic disk, optical disk, magneto-optical disk, etc.

[0008] According to an aspect of the present invention, the communication unit transmits and receives information to and from a user terminal unit through the communications network. The interactive unit releases online the data encrypted on the user storage medium from a cryptogram through the communication unit according to the order information received in an interactive form from the above described user terminal unit.

[0009] Thus, the user can decipher and then utilize the contents of a specified software on the distributed storage medium.

[0010] According to another aspect of the present invention, the interactive unit transmits online through the communication unit a first key information for use in accessing in the user terminal unit the information stored on a user storage medium based on the above described order information.

[0011] The interactive unit communicates with the user terminal unit through the communication unit and receives software purchase order information requested by the user. Based on the order information, the interactive unit transmits online to the user terminal unit the first key information for use in accessing the software (information) stored on the storage medium.

[0012] Then, the user deciphers the requested software on the user terminal unit using the transmitted first key information, and installs it on a hard disk, etc. The host computer system stores the user identification information and the identification information about the requested software, and charges the user the fee.

[0013] According to a further aspect of the present invention, the information storage unit stores a second key information specific to the information stored on the above described storage medium. The interactive unit searches the information storage unit according to the order information, retrieves the second key information corresponding to the ordered information, and transmits to the user terminal unit the first key information generated according to the second key information.

[0014] The second key information stored by the information storage unit is a software key specific to the software stored on the storage medium, and is independent of the identification information about the accessing user and user terminal unit. The interactive unit retrieves the corresponding second key information from the information storage unit according to the software identification information contained in the order information.

[0015] Using the software-specific second key information, the first key information effective only to a specified software is generated. Therefore, it is impossible to use the first key information for deciphering other software. As a result, the deciphering service charge can be collected for each piece of software.

[0016] According to a further aspect of the present invention, the key generating unit generates the first key information according to the user identification information or user terminal unit identification information contained in the order information, and according to the second key information received from the interactive unit.

[0017] Thus, the generated first key information is a composite key required to read, on the user terminal unit from which the order information is transmitted, the software having the second key information as a software key.

[0018] For example, deciphering data according to the first key information generated using the user identification information and second key information allows the user to be automatically charged corresponding to the user identification information. Therefore, an error occurs if a person other than the authorized user tries to decipher the data. The first key information generated using the user terminal unit identification information and second key information can be used only on the corresponding user terminal unit. Therefore, the software cannot be read on another user terminal unit using the first key information.

[0019] According to a further aspect of the present invention, the user terminal unit comprises a mounting unit, an order output unit, and a deciphering unit. The mounting unit mounts a storage medium. The order output unit accesses an deciphering center through a communications network, selects the information stored on the above described storage

medium in an interactive mode with the deciphering unit, and outputs order information to the deciphering center.

[0020] The deciphering unit receives online from the deciphering center through the communications network the first key information for use in accessing the selected information from the storage medium, and then accesses the selected information on the storage medium according to the first key information.

[0021] According to a further aspect of the present invention, a user terminal unit comprises a computer-readable storage medium for storing a program for a deciphering service.

[0022] The computer-readable storage medium directs the computer at the user terminal unit to access the deciphering center through the communications network, select the information stored on the above described storage medium in an interactive mode with the deciphering unit, and output order information to the deciphering center. It also directs the computer to receive online from the deciphering center through the communications network the first key information for use in accessing the selected information on the storage medium, and then access the selected information on the storage medium according to the first key information.

[0023] The computer-readable storage medium can be either the same one as the storage medium storing the information to be accessed, or another one.

BRIEF DESCRIPTION OF THE DRAWINGS

[0024] **FIG. 1** shows the principle of the online deciphering system according to the present invention;

[0025] **FIG. 2** shows a distribution system for the CD-ROM software;

[0026] **FIG. 3A** shows the configuration of the system according to the embodiment of the present invention;

[0027] **FIG. 3B** shows the configuration of the information processing device;

[0028] **FIG. 4** is a flowchart (1) showing the CD-ROM deciphering process;

[0029] **FIG. 5** is a flowchart (2) showing the CD-ROM deciphering process;

[0030] **FIG. 6** is a flowchart (3) showing the CD-ROM deciphering process;

[0031] **FIG. 7** shows the display screen (1) of a common communications software;

[0032] **FIG. 8** shows the display screen (2) of a common communications software;

[0033] **FIG. 9** shows the display screen (3) of a common communications software;

[0034] **FIG. 10** shows the display screen (4) of a common communications software;

[0035] **FIG. 11** shows the display screen (5) of a common communications software;

[0036] **FIG. 12** shows the display screen (1) where data is manually input;

[0037] **FIG. 13** shows the display screen (2) where data is manually input;

[0038] **FIG. 14** shows the display screen (3) where data is manually input;

[0039] **FIG. 15** shows the display screen where previously-known information is omitted;

[0040] **FIG. 16** shows a transmitted mail and received mail;

[0041] **FIG. 17** shows information about each software;

[0042] **FIG. 18** shows the display screen when the software has already been updated;

[0043] **FIG. 19** shows the display screen for confirmation of a key number;

[0044] **FIG. 20** shows the case in which the key number is recorded in the file;

[0045] **FIG. 21** shows the display screen showing the contents of the communications log;

[0046] **FIG. 22** shows a record of the active contents table;

[0047] **FIG. 23** shows a record of the purchase history table;

[0048] **FIG. 24** shows a record of the active customer table;

[0049] **FIG. 25** shows a record of the accounting log table;

[0050] **FIG. 26** shows a record of the error log table; and **FIG. 27** shows a record of the access log table.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0051] The embodiments of the present invention are described in detail below by referring to the attached drawings.

[0052] **FIG. 1** shows the principle of the online deciphering system according to the present invention. The online deciphering system shown in **FIG. 1** comprises a communication unit **1**, an interactive unit **2**, a key generating unit **3**, and an information storage unit **4**.

[0053] The communication unit **1** transmits and receives information to and from a user terminal unit through the communications network. The interactive unit **2** releases online the data encrypted on the user encrypted storage medium through the communication unit **1** according to the order information received in an interactive form from the above described user terminal unit. An encrypted storage medium refers to a medium such as a CD-ROM disk, etc. containing encrypted information.

[0054] The interactive unit **2** online transmits through the communication unit **1** a first key information for use in accessing in the user terminal unit the information stored on a user encrypted storage medium based on the above described order information.

[0055] The information storage unit **4** stores the second key information specific to the information stored on the above described storage medium. The interactive unit **2** searches the information storage unit **4** according to the

order information, and retrieves the second key information corresponding to ordered information.

[0056] The key generating unit **3** generates the first key information according to the user identification information or user terminal unit identification information contained in the order information, and according to the second key information.

[0057] For example, the communication unit **1** shown in **FIG. 1** corresponds to a gateway **33** shown in **FIG. 3A**, the interactive unit **2** corresponds to a receiving unit **34**, the key generating unit **3** corresponds to an enciphering system **35**, and the information storage unit **4** corresponds to a database **32**. The storage medium corresponds to the enciphered CD-ROM, and the user terminal corresponds to the personal computer (PC) comprising an enciphered CD-ROM system **21**.

[0058] The online deciphering system shown in **FIG. 1** corresponds to, for example, a host computing system connected to the user terminal unit through the communications network, and provides a deciphering service for the storage medium such as a CD-ROM disk, etc. mounted in the user terminal unit, at a request from the user.

[0059] The interactive unit **2** communicates with the user terminal unit through the communication unit **1** and receives software purchase order information requested by the user. Based on the order information, the interactive unit transmits online to the user terminal unit the first key information for use in retrieving the software (information) stored on the encrypted storage medium.

[0060] Then, the user deciphers the requested software on the user terminal unit using the transmitted first key information, and installs it to a hard disk, etc. The host computer system stores the user identification information and the identification information about the requested software, and charges the user the fee.

[0061] The second key information stored by the information storage unit **4** is a software key specific to the software stored on the encrypted storage medium, and is independent of the identification information about the accessing user and user terminal unit. The interactive unit retrieves the corresponding second key information from the information storage unit **4** according to the software identification information contained in the order information, and transmits it to the key generating unit **3**.

[0062] The key generating unit **3** generates the first key information to be provided to the user, according to the second key information received from the interactive unit **2** and according to the user identification information or user terminal unit identification information contained in the order information. Thus, the generated first key information is composite key information required to read, on the user terminal unit through which the order information is transmitted, the software having the second key information as a software key.

[0063] For example, deciphering data according to the first key information generated using the user identification information and second key information allows the user to be automatically charged corresponding to the user identification information. Therefore, an error occurs if a person other than the authorized user tries to decipher the data. The first key information generated using the user terminal unit identification information and second key information can be used only on the corresponding user terminal unit. Therefore, the software cannot be read on another user terminal unit using the first key information.

[0064] Thus, the user has the software on the distributed storage medium released online from a cryptogram, at his or her request.

[0065] **FIG. 2** shows the distribution system of the software stored on CD-ROM (CD-ROM software). A sales agent dealing in CD-ROM software establishes a CD-ROM deciphering center **14**, and the information is managed in databases **11**, **12**, and **13**. A contents provider contracts with the sales agent to perform the sales, and provides pictures, films, music, etc. for the sales agent as the contents of the CD-ROMs. The contents collecting department of the sales agent stores the received contents in the database **11** to be used as a warehouse for the electronic information. The sales agent retrieves the contents from the database **11** based on the editing plan scheduled by the planning department of an external agent, and generates a CD-ROM **17**.

[0066] The published CD-ROM **17** is distributed by a distributor to users who are NIFTY members. NIFTY or NIFTY-SERVE is the name of a personal computer communications service. The user checks the product list on the CD-ROM **17** mounted into his or her personal computer, and is then connected to the CD-ROM deciphering center **14** using a gateway through a personal computer communications network **16** and a NIFTY center **15**. Thus, the user orders one of the products, that is, a CD-ROM software. The CD-ROM deciphering center **14** provides the user with the key to the ordered product online, and stores the sales record in the databases **12** and **13**. The databases **12** and **13** are used as a sales management DB (database) and a customer management DB respectively. In this example, the CD-ROM deciphering center **14** is open all hours.

[0067] The accounting/purchasing department of the sales agent refers to the sales information stored in the database **12** to distribute the amount of the sales and perform an accounting process. At this time, the contents provider gets payment based on the contract, and the contents collecting department and the planning department record the editing and planning fees.

[0068] **FIG. 3A** shows the configuration of the system for realizing the distribution system as shown in **FIG. 2**. In **FIG. 3A**, the user personal computer (user PC) is provided with the enciphered CD-ROM system **21** comprising a product selecting portion **22**, an order output portion **23**, and a deciphering portion **24**. When the enciphered CD-ROM system **21** is installed by the user from the CD-ROM **17** to the user PC, a machine identifier (MID) specifying the user PC is generated, provided with an illegal copy preventing mechanism, and recorded in a file. The enciphered CD-ROM system **21** is connected to a CD-ROM deciphering center **31** through a common communications terminal software **25** (PC communications software) and the common PC communications network **16**.

[0069] The CD-ROM deciphering center **31** comprises the database **32**, gateway **33**, receiving unit **34**, enciphering system **35**, and an accounting system **36**. The receiving unit **34**, enciphering system **35**, and accounting system **36** cor-

responds to the functions of the processor of the host computer forming the CD-ROM deciphering center **31**. The database **32** stores various management tables such as an active contents table, purchase history table, active customer table, accounting log table, error log table, access log table, etc.

[0070] The user mounts the enciphered CD-ROM **17**, selects a product through the product selecting unit **22**, and generates a text file as an order file using the order output unit **23**. Then, using the communications terminal software **25**; the user is connected to the PC communications network **16**, accesses the CD-ROM deciphering center **31** through the gateway **33**, and orders the product by presenting the order file. At this time, the user enciphers the user identifier (UID) and MID together with the CD number and product number, and notifies the CD-ROM deciphering center **31** of the enciphered data. These numbers and enciphered UID and MID are recorded in the order file by the enciphered CD-ROM system **21**.

[0071] The CD-ROM deciphering center **31** retrieves the CD number and product number from the active contents table according to the order file received by the receiving unit **34**, and reads the corresponding software key. Then, it passes to the enciphering system **35** the read software key and the UID and MID entered in the order file. The enciphering system **35** enciphers the software key using one or both of UID and MID, and generates the key number of the ordered product. The receiving unit **34** notifies the user of the key number generated by the enciphering system **35**. The accounting system **36** computes data relating to the charge for the product in association with the receiving unit **34**.

[0072] On the other hand, the user stores the key notified by the CD-ROM deciphering center **31**, and deciphers the product data on the CD-ROM **17**. At this time, the deciphering unit **24** decodes the user-input key number using the user UID and user PC MID, decodes the product data after obtaining the software key of the ordered product, and finally implements the product and utilizes it.

[0073] Thus, enciphering the software key using the MID of the user PC limits the key to use only on the user PC corresponding to the MID. This prevents illegal use of the software key on other personal computers. Furthermore, enciphering the software key using the UID allows the user to be automatically charged the product fee according to the UID. If each user is preliminarily informed of this, illegal use by other users can be successfully avoided. Additionally, if data is enciphered using both MID and UID, a double preventive effect is obtained.

[0074] **FIG. 3B** shows the configuration of the computer used as a PC. The computer shown in **FIG. 3B** comprises a CPU **41**, a memory **42**, an input device **43**, a display **44**, a CD-ROM driver **45**, and a network connecting device **46**. Each of these devices are connected via a bus **47**.

[0075] The CD-ROM **17** is loaded into the CD-ROM driver **45**, and the program corresponding to the enciphered CD-ROM system **21** is installed from the CD-ROM **17** to the memory **42**. The CPU **41** executes the program using the memory **42** and performs the processes of the product selecting portion **22**, order output portion **23**, and deciphering portion **24**.

[0076] The input device **43** corresponds to, for example, a keyboard, a pointing device, etc. and is used in inputting instructions from the user. The screen of the display **44** displays messages, etc. The network connecting device **46** is connected to the PC communications network **16** to control the communications to the CD-ROM deciphering center **31**.

[0077] The configuration of the host computer of the CD-ROM deciphering center **31** is basically the same as that shown in **FIG. 3B**. However, the CPU of the host computer does not perform the process of the enciphered CD-ROM system **21**, but the processes of the receiving unit **34**, enciphering system **35**, accounting system **36**, etc.

[0078] **FIGS. 4, 5**, and **6** are flowcharts showing the CD-ROM deciphering process performed by the CD-ROM deciphering center **31**. **FIGS. 7, 8, 9, 10**, and **11** show the screen images of the user PC displayed when the common PC communications software **25** is used. In this example, HIDE-TERM is used as well-known example of the PC communications software **25**.

[0079] If the process starts as shown in **FIG. 4**, the receiving unit **34** first checks the user ID (UID) (step S1). If the credit flag of the active customer table corresponding to the user ID is B indicating that the user is entered on the "black list", the user is made to exit the program with a termination message (step S2). Otherwise, the user is inquired as to whether he or she requests to purchase software, display an already purchased software, or exit the program (step S3).

[0080] In this example, the screen as shown in **FIG. 7** is displayed on the display **44**. In **FIG. 7**, the user selects from the menu "Media Shuttle" corresponding to the CD-ROM software sales service. After the "Media Shuttle" start message, three selection items, that is, obtaining the implementation key number, displaying a product list, and exiting the program, are displayed.

[0081] When the user selects to exit, the process terminates. When the user selects to display the already purchased software, the software already purchased by the user is displayed in 10 rows from the latest data (step S4). Unless the user stops partway, the data is completely displayed. When the user selects to purchase, an opening message is output (step S5), and the order file input condition is confirmed (step S6).

[0082] When the user selects the upload as an input method, a prompt message is output (step S7) and the system waits for the input to terminate (step S8). When the input terminates, an input order file is interpreted through a parse process (step S9). When it cannot be parsed, the prompt message is issued again. If the NIFTY-ID of the order file (order sheet) is different from the log-in NIFTY-ID, then a message is issued to return to *START (step S3). In this example, the log-in NIFTY-ID refers to an identifier received by the user when the user logs into the NIFTY center **15**.

[0083] When the user selects manual input as an input method, a prompt message is output (step S10). When the user confirms the message (step S11), the next prompt message is output. These processes are repeated until all necessary items are completely input. If the NIFTY-ID of the order sheet is different from the log-in NIFTY-ID, then a message is issued to return to *START.

[0084] If the user has accessed the system before, known data such as name, telephone number, etc. can be displayed according to the active customer table, to omit inputting the known data again.

[0085] The upload of the text is selected in **FIG. 7**, and the implementation file as shown in **FIG. 8** is uploaded as an order file in the text mode. In **FIG. 8**, NIFTY-ID corresponds to UID. The CD number indicates the identification number of the CD-ROM. The access number indicates the enciphered result (enciphered MID) of the MID of the user PC. The product numbers **1** and **2** indicate the numbers of the ordered products. The order file is displayed, and then the user selects to amend the order file. As a result, the name is partially amended.

[0086] Then, the receiving unit **34** instructs the user to input the answers to the questionnaire (step **S12** shown in **FIG. 5**). However, the user only has to input the answers to the questionnaire at his or her initial access. The contents of the order sheet are checked (step **S13**).

[0087] **FIG. 9** shows an example of input answers to the questionnaire. In **FIG. 9**, the birthday, gender, model personal computer, and type of credit card are input as the answers to the questionnaire. The number of the first product of the two ordered products is confirmed.

[0088] Next, the receiving unit **34** computes the total cost of the ordered products (step **S14**) and checks the order sheet according to th active contents table (step **S15**). As a result, if an illegal sales condition breaching a predetermined sales form is detected, it is output as an error with an error message, and the user is prompted to select either to re-input or exit (step **S16**). Then, an error log is output to the error log table. If data is to be input again, control is returned to *START when there is a single order and the re-input process is omitted for the NG's when there are a plurality of orders.

[0089] For example, when an ordered product is not entered in the active contents table, the error message informs, "The specified software does not exist." If an urgent stop flag is set, then the error message informs, "We currently don't deal with this software." If the ordered products are not within the range between the sales start and termination dates, then the error message informs, "The software is out of the sales period." Even if the software does not exist, the system is returned to a normal condition as long as the re-sales flag is 1 and it is within the re-sales period.

[0090] If the credit flag indicates 0 or 1, the receiving unit **34** refers to the active customer table to check the maximum account value (MAX) (step **S17**). When the first NG is encountered, the message is issued to return control to *START. When the second and consequent NGs are encountered, the control jumps to an account log output process.

[0091] Then, the active customer table is updated (step **S18**) In this example, the active customer table is updated using the NIFTY-ID as a key.

[0092] According to the instruction from the receiving unit **34**, the enciphering system **35** generates a key to be provided to the user (step **S19** shown in **FIG. 6**). If the key cannot be generated due to an incorrect access number, etc., an error message is output to prompt the user to select either re-input or exit (step **S20**). Then, an error log is output to the error log table. If data is re-input, control is returned to *START when there is a single order, and the re-input process is omitted for the NGs when there are a plurality of orders.

[0093] Next, the receiving unit **34** updates the purchase history table (step **S21**), notifies the user of the generated key (step **S22**), and updates an account log table (step **S23**). However, if the credit flag=T, the account log table is not updated.

[0094] Then, the notified key is checked by the user (step **S24**), and the processes in and after step **S13** are repeated for the product described on the order sheet. If the user stops the purchase for some reason, an error message informing that "The fee is charged. An electronic mail is addressed to XXXX (NIFTY-ID of the system manager)." is output, and an error log is output to the error log table (step **S25**). If there are a plurality of orders, the user can exit the process here.

[0095] The user is informed of the implementation key number shown in **FIG. 10** as a key to the product numbered as shown in **FIG. 9**. As shown in **FIG. 10**, the user inputs the implementation key number, which is provided for confirmation, through the deciphering unit **24**, and the receiving unit **34** of the CD-ROM deciphering center **31** confirms it. Then, the second product number is confirmed, and the corresponding implementation key number is provided.

[0096] If the key has been notified and confirmed for all products entered on the order sheet, then a message (purchase slip) is output (step **S26**), a termination message is output (step **S27**), and control is returned to *START. When the user selects EXIT in step **S3**, the process terminates.

[0097] **FIG. 11** shows an example of displaying the purchase slip and termination message. In **FIG. 11**, it is clearly indicated that the key charge (implementation charge) is added to the use charge of NIFTY-SERVE.

[0098] If the user has not selected the upload of a product order sheet, but has selected the manual input in step **S6**, then the display screen of the user PC is as shown in FIG'S **12**, **13**, and **14**. In **FIGS. 12 and 13**, the NIFTY-ID, user name, CD number, access number, birthday, gender, model of the user PC, type of the credit card, and ordered product number are sequentially input in the interactive mode. According to the input CD number, product number, and access number, the implementation key number is notified as shown in **FIG. 14**.

[0099] At this time, if the user has accessed the system before, he or she can omit inputting the already input data as shown in **FIG. 15**. In **FIG. 15**, only the NIFTY-ID, that is, the PC communications ID, is input. The other items, that is, the name, address, CD number, and access number have all been entered previously, and are displayed without being re-input. When the user inputs and confirms the product number, the implementation key number is notified similarly as in **FIG. 14**.

[0100] The system shown in **FIG. 3** processes an order through common PC communications, but can also process it through an electronic mail system. In this case, the order transmission mail and implementation key number notification mail are shown in, for example, **FIG. 16**. According to this method, it is not necessary to trace the tree structure of the menu of the PC communications center (NIFTY center)

to access the CD-ROM deciphering center **31**, thereby efficiently transmitting the key. In the system shown in **FIG. 3**, the information is stored for each software in the access contents table. Therefore, an individual message is output for each set of software when the product number is confirmed.

[0101] **FIG. 17** shows the comment column in the active contents table in the database **32**, which stores information about each set of software. In the enciphered CD-ROM **17**, there is a time lag between editing the CD-ROM and distributing it. Accordingly, the software may be updated during this period. In such a case, the comment column should contain the information that "this software has been updated" as shown in **FIG. 17** so that a corresponding message can be output when the software is ordered. For example, when the product number **001** shown in **FIG. 17** is ordered, the message shown in **FIG. 18** is output. If the user accepts the message, he or she is to purchase the implementation key number corresponding to the older version of the distributed software. **FIG. 18** shows that the user has stopped the purchase.

[0102] The information displayed before the notification of the implementation key number can also be "There are bugs in the software. If you accept this, please purchase the software.", "This is the second time you have purchased this software. If you accept this, please purchase the software.", etc.

[0103] According to the present embodiment, the notified key number is confirmed in step S24 shown in **FIG. 6** so that the user may not mistakenly memorize and use the key number. **FIG. 19** shows again the entry screen for confirmation of the key. For example, if the user mistakenly memorizes the implementation key number, then the receiving unit **34** can detect the error because the implementation key number does not match the notified number.

[0104] In the above described embodiment, the user memorizes the key notified from the CD-ROM deciphering center **31**, and inputs it to the enciphered CD-ROM system **21** through the keyboard to allow the deciphering portion **24** to decipher the CD-ROM. However, the key number should also be noted in a notebook using this method. Instead, if the user records in an electronic file the key notified from the CD-ROM deciphering center **31**, the deciphering portion **24** can automatically read the file to decipher the product.

[0105] **FIG. 20** shows an example of the text file storing the information notified from the CD-ROM deciphering center **31**. The user generates the text file as shown in **FIG. 20** using a capability of the PC communications software **25** to write a part of the communications log to the file. The deciphering portion **24** automatically reads the implementation key number described in the text file, and deciphers the CD-ROM.

[0106] Instead of the user noting in the file the key number notified from the CD-ROM deciphering center **31**, the PC communications software **25** can automatically store the contents of the communications log in the file. In this case, the automatic piloting function of the common PC communications software **25** prepares in the enciphered CD-ROM system **21** the automatic piloting script storing, in the file, from A to B as shown in **FIG. 21**. The positions of A and B in the communications log are automatically specified by retrieving the character strings "requested product" and "implementation fee" respectively. The deciphering portion **24** reads the implementation key number from the thus-generated file to decipher the CD-ROM.

[0107] According to this method,- the enciphered CD-ROM system **21** automatically receives the key and deciphers the CD-ROM, thereby reducing the load of the user.

[0108] Described below is the record of each table stored in the database **32**, shown in **FIG. 3A**.

[0109] **FIG. 22** shows the record of the active contents table. The table name is TB ACTIVE CONTENT, and the table is used to obtain the software key according to the user-specified CD number and contents number (product number or work number). It is also used to obtain the sales form and price according to the user-specified contents number.

[0110] The table is distributed using a 1.4 MB floppy disk (CSV format/SJIS). The contents number is obtained by merging TYPE and LEVEL. The file name is CD9508.CSV and is used to update the existing table. The name is uniquely assigned using a concatenation key by adding the CD number and contents number.

[0111] In **FIG. 22**, the receiving unit **34** determines the sales price in consideration of the price switch date. The price is updated at 00:00 on the day specified by the price switch date. If the price switch date is set to 0, the old price is assigned.

[0112] The contents of the sales form type are as follows.

[0113] 1: The identical user is provided with the software free of charge for the second and consequent accesses, regardless of the machine ID (MID).

[0114] That is, the user is charged for the software when he or she first obtains it, and the software is provided to the user free of charge for the second and consequent accesses.

[0115] 2: The identical user is provided with the software free of charge for the first through the fifth accesses regardless of the machine ID, but is inhibited from accessing the software for the sixth and consequent accesses.

[0116] That is, the software is provided free of charge for the first through fifth accesses, but is inhibited from being accessed for the sixth and consequent accesses.

[0117] 3: The identical user is provided with the software free of charge for the second and consequent accesses using the same machine ID (MID).

[0118] That is, the user is charged for the software when he or she first obtains it, and the software is provided to the user free of charge for the second and consequent accesses.

[0119] 4: The identical user is provided with the software free of charge for the first through the fifth accesses using the same machine ID, but is inhibited from accessing the software for the sixth and consequent accesses.

[0120] That is, the software is provided free of charge for the first through fifth accesses, but is inhibited from being accessed for the sixth and consequent accesses.

[0121] 5: The software is provided free of charge to the same machine ID for the second and consequent accesses regardless of the user ID.

[0122] That is, the machine is charged for the software when it is first provided with the software, and the software is provided to the machine free of charge for the second and consequent accesses.

[0123] 6: The software is provided free of charge to the same machine ID for the first through fifth accesses regardless of the user ID. However, the machine is prohibited from accessing the software for the sixth and consequent accesses.

[0124] That is, the machine is provided with the software free of charge for the first through fifth accesses. However, the machine is prohibited from accessing the software for the sixth and consequent accesses.

[0125] 7: The user is charged for the software for the second and consequent accesses.

[0126] That is, the user is charged for the software regardless of the user ID and machine ID. The user is charged for the software for the first and second accesses.

[0127] 8: The user is prohibited from accessing the software for the second and consequent accesses.

[0128] That is, the user is charged for the software for the first access. If the software has been implemented using the user ID, the same user is prohibited from accessing the software regardless of the machine ID for the second and consequent accesses.

[0129] 9: Free of charge

[0130] The software is always provided free of charge regardless of the user ID and machine ID. It is provided free of charge even if the value of the price field is other than 0.

[0131] 10: The identical user is charged, with a suitable message, for the software for the second access regardless of the machine ID.

[0132] That is, the user is charged, without a message, for the software for the first access. The user is presented only with the message for the second access, but it is not inquired whether or not he or she purchases the software.

[0133] 11: The message is output for the first purchase, and the user is inquired as to whether or not he or she purchases the software, even for the first access.

[0134] That is, the message is output for each access regardless of the user ID or machine ID, to inquire as to whether or not the user purchases the software. If the user is prohibited from accessing the software, a message indicating "The software cannot be deciphered. Send mail to XXXX (XXXX-SHB00906)." is output.

[0135] The contents for the re-sales type are as follows.

[0136] 1: re-saleable.

[0137] 0: not re-saleable.

[0138] The contents of the urgent sales stop are as follows.

[0139] 1: urgent sales stop

[0140] 0: no urgent sales stop

[0141] **FIG. 23** shows a record of the purchase history table. The table name is TB PURCHASE LOG, and the table is used in making a check when the software is accessed by a plurality of users with the same NIFTY-ID or the same machine ID. It is also used for displaying the purchased software. This table is added to/deleted from during the operation. In **FIG. 23**, the purchase amount is recorded when the software is purchased.

[0142] **FIG. 24** shows a record of the active customer table. The table name is TABLE TB ACTIVE CUSTOMER, and the table is used in making the black list check at the time of logging-in. It is also used in helping inputting data through the keyboard. For example, the known data such as a name, etc. is retrieved from this table at the second access. This table is added to/deleted from during the operation. The active customer table is required in checking the maximum monthly account value. If the monthly total exceeds the account limit, it is determined to be NG.

[0143] In **FIG. 24**, the contents of the credit flag are as follows.

[0144] If 'B' is set, then the user is referred to as a black listed customer and the sale is prohibited.

[0145] If '0' is set, the amount of the standard limit is not exceeded. If the accumulative purchase amount for the current month does not exceed the value set for the credit limit, then the sales is permitted. The total of the ordered products plus the purchase amount for the current month is determined to be the accumulative purchase amount for the current month.

[0146] If '1' is set, the user is referred to as an executive customer. If the accumulative purchase amount for the current month does not exceed the value set for the item of the credit limit, the sales is permitted. The program is executed as in the case of '0'.

[0147] If 'T' is set, then the user is referred to as a test ID customer without credit limit. Therefore, the normal accounting process is not applied to this user.

[0148] The receiving unit **34** switches the credit limit depending on the user according to the credit limit switch date. The credit limit is switched at 00:00 of the credit limit switch date. If the credit limit switch date is 0, then the old credit limit amount is adopted, and the purchase amount switch date is not applied. The purchase amount for the current month and the purchase amount for the previous month are copied by a process called CRON on the specified date. The purchase amount for the current month is set to 0. When the number of models exceeds 5, one of the models is sequentially rewritten.

[0149] **FIG. 25** shows a record of the accounting log table. The table name is TB CHARGE LOG, and the table is passed to EDP. If the software has already been purchased, the purchase amount is passed as '-1'. If the software is provided free of charge, then '0' is passed as the purchased amount. This table is added to/deleted from during the operation.

[0150] **FIG. 26** shows a record of the error log table. The table name is TABLE TB ERROR LOG, and the table is used in monitoring errors. This table is added to/deleted from during the operation.

[0151] In **FIG. 26**, the contents of the cause of an error are as follows.

[0152] 1: black list

[0153] 2: ID error

[0154] 3: parse error

[0155] 4: no corresponding software

[0156] 5: illegal maximum accounting value

[0157] 6: urgent stop access

[0158] 7: sales period (including re-sales) error

[0159] 8: illegal sales form

[0160] 9: key generation error

[0161] 10: key confirmation error

[0162] 11: other system error

[0163] FIG. 27 shows a record of the access log table. The table name is TABLE TB ACCESS LOG, and the table is used in obtaining statistical data of accesses to the CD-ROM deciphering center 31.

[0164] In the above described embodiments, a CD-ROM is used as an enciphered storage medium. However, the present invention is also applicable to other storage media that can be enciphered by a sales agent. In such cases, the user sends an order file describing the identifier of a product on the storage medium, an access number, etc. to the deciphering center. The deciphering center notifies the user of the corresponding key. The other storage media can be, for example, a floppy disk, memory card, magnetic disk, optical disk, magneto-optical disk, etc.

[0165] Furthermore, the information stored on an enciphered storage medium can be image data, music data, software program, and any other software information.

[0166] According to the present invention, the information stored on an enciphered storage medium, such as a CD-ROM, etc. distributed to the users, can be provided online. At this time, the user is provided with various services including the decryption of the information on the storage medium while communicating with the deciphering center in an interactive mode.

What is claimed is:

1. An online deciphering system comprising:

communicating means for transmitting information to and from a user terminal unit through a communications network; and

interactive means for online releasing the enciphered information on a storage medium of a user from a cryptogram according to order information received from the user terminal unit in an interactive mode.

2. The online deciphering system according to claim 1, wherein

said interactive means online transmits a first key information for use in accessing information stored on the storage medium to the user terminal unit through said communicating means according to the order information.

3. The online deciphering system according to claim 2, further comprising:

information storage means for storing a second key information specific to the information stored on the storage medium, wherein

said interactive means searches said information storage means according to the order information, retrieves the second key information corresponding to ordered information specified by the order information, and transmits to the user terminal unit the first key information generated using the second key information.

4. The online deciphering system according to claim 3, further comprising:

key generating means for generating the first key information based on the second key information and user terminal unit identification information contained in the order information.

5. The online deciphering system according to claim 3, further comprising:

key generating means for generating the first key information based on the second key information and user identification information contained in the order information.

6. The online deciphering system according to claim 3, further comprising:

key generating means for generating the first key information based on the user identification information, the user terminal unit identification information, and the second key information.

7. The online deciphering system according to claim 2, wherein

said interactive means receives the order information from the user terminal unit, and transmits the first key information to the user terminal unit by electronic mail.

8. The online deciphering system according to claim 2, wherein

said interactive means instructs the user to input the first key information transmitted to the user terminal unit and confirms input key information.

9. The online deciphering system according to claim 1, wherein

said storage medium is a compact disk read only memory.

10. The online deciphering system according to claim 1, wherein

said interactive means receives the order information comprising a plurality of items from the user terminal unit in a file format.

11. The online deciphering system according to claim 1, wherein

said interactive means receives the order information comprising a plurality of items from the user terminal unit through manual input.

12. The online deciphering system according to claim 11, wherein

said interactive means allows the user to omit inputting known items among the plurality of items contained in the order information.

13. The online deciphering system according to claim 1, further comprising:

information storage means for storing a comment for each piece of the information stored on the storage medium, wherein

said interactive means outputs a message for each piece of the information stored on the storage medium.

14. A terminal device comprising:

means for mounting an enciphered storage medium;

order output means for accessing a deciphering center through a communications network, selecting information stored on the enciphered storage medium through interaction with the deciphering center, and outputting order information to the deciphering center; and

deciphering means for online receiving a first key information for use in retrieving the selected information from the enciphered storage medium, and for accessing the selected information on the enciphered storage medium according to the first key information.

15. The terminal device according to claim 14, wherein

said order output means outputs the order information comprising a plurality of items in a file format.

16. The terminal device according to claim 14, wherein

said order output means outputs the order information comprising a plurality of items one item at a time.

17. The terminal device according to claim 14, wherein

said deciphering means automatically reads a file storing the first key information received from the deciphering center, and for extracting the first key information from the file.

18. The terminal device according to claim 17, wherein

said deciphering means further comprises an automatic piloting means for automatically storing in the file the first key information received from the deciphering center.

19. A computer-readable storage medium used to direct a computer to perform, when used in the computer, the functions of:

accessing a deciphering center through a communications network, selecting information stored on an enciphered storage medium through interaction with the deciphering center, and outputting order information to the deciphering center; and

online receiving a first key information for use in accessing the selected information on the enciphered storage medium, and for accessing the selected information on the enciphered storage medium according to the first key information.

20. A computer-readable storage medium used to direct a computer to perform, when used in the computer, the functions of:

accessing a deciphering center through a communications network, selecting information stored on the storage medium through interaction with the deciphering center, and outputting order information to the deciphering center; and

online receiving a first key information for use in accessing the selected information from the storage medium, and for accessing the selected information on the storage medium according to the first key information.

21. An online deciphering system comprising: communicating means for transmitting information to and from a user terminal unit through a communications network; and

interactive means for online transmitting information required to decipher enciphered information on a storage medium of a user according to order information received from the user terminal unit in an interactive mode.

22. An online deciphering system for use with a communications system connecting a user terminal unit with a deciphering center through a communications network, said system comprising:

order output means for accessing the deciphering center through the communications network, selecting information stored on an enciphered storage medium in an interactive mode, and outputting order information to the deciphering center;

interactive means for online transmitting to the user terminal unit a first key information for use in accessing the selected information on the enciphered storage medium in the user terminal unit through the communications network according to the order information received from said order output means in the interactive mode; and

deciphering means for accessing the selected information on the enciphered storage medium using the first key information received from said interactive means.

23. An online deciphering method comprising the steps of:

receiving order information from a user terminal unit, in which a storage medium is mounted, through a communications network; and

online releasing enciphered information stored on the storage medium from a cryptogram through the communications network according to the order information.

24. The online deciphering method according to claim 23, wherein

a first key information is generated for use in accessing information stored on an enciphered storage medium according to the order information received from the user terminal unit provided with the enciphered storage medium; and

the first key information is online transmitted to the user terminal unit through the communications network.

25. An online deciphering method comprising the steps of:

mounting an enciphered storage medium in a user terminal unit;

accessing a deciphering center through a communications network, selecting information stored on the enciphered storage medium through interaction with the deciphering center, and outputting order information to the deciphering center;

online receiving a first key information for use in accessing the selected information on the enciphered storage medium through a communications network; and

accessing the selected information on the enciphered storage medium according to the first key information.

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